

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7 q 4

1. Edition

En

PES6A 90 D 410 RS 2293 RSV 350-1300 AOB 1101 DL

supersedes:

company: Daimler-Benz
engine: OM 352 A
110 kW(150 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,15-2,25$
(2,1 - 2,3) mm (from: PDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1300	10,6+0,1	7,0 - 7,1	0,3(0,45)			
350	6,9-7,1	0,9 - 1,5	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca. 18	350	6,5	1300	10,6+0,1
	x =	3,0					100		800	10,9+0,2
ca. 55	9,6	1340-1350					350	6,9-7,1	500	11,3+0,1
⑤	4,0	1365-1395					465-525	2,0mm		
	1500	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1300	70,0-71,0 (68,0-73,0)	1340-1350*		500	62,0-64,0 (60,0-66,0)	100	79,25-89,25 bei 14,6 - 15,0 mmRW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 3,8 n

3. Edition

En

PES 4 A 90 D 410 RS2570 RSV 350-1400 AOB2070L

** Set idle-speed auxiliary spring at 2,0 mm
control-rod travel.

supersedes 4.81
company: Daimler-Benz
engine OM 314
62 kW (84 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{matrix} 2,25-2,35 \\ (2,20-2,40) \end{matrix}$ mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1380	11,9+0,1	6,1 - 6,3	0,3(0,45)			
350	8,8-9,0	0,4 - 1,0	0,2(0,4)			
600	12,6+0,1	C, 4-5	0,4(0,55)			
900	12,4+0,2					

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca. 24	350	8,9**		
	x =	3,25							1380	11,9+0,1
ca. 57	1420-	1430=10,9					440-	500=2,0	900	12,4+0,2
⑤	1485-	1505= 4,0						mm	600	12,6+0,1
	1600=	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.	③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min						
rev/min	cm ³ /1000 strokes	3	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2		4	5	6	7	8	9
1380	61,5-62,5 (59,5-64,5)	1420-1430*	900	57,5-60,5 (55,5-62,5)	100	72,25-82,25 bei 16,8- 17,2 mmRW	-	-
			600	52,0-54,0 (50,0-56,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.81

BOSCH

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Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 3,8 n 7

1. Edition

En

PES 4 A 90 D 410 RS 2570

RSV 350-1200 A 2 B 1147 L

supersedes -

company:

Daimler-Benz

engine

OM 314 A

63 kW (86 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,25-2,35$
(2,2 - 2,4) mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1200	11,5+0,1	6,9 - 7,0	0,2(0,25)			
350	7,9-8,1	0,7 - 1,3	0,2(0,25)			
800	12,3+0,1	C, Sp.4+5	0,25(0,3)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque contro.	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca.25	350	7,5	1200	11,5+0,1
	x =	5,75					350	7,9-8,1	900	11,9+0,2
							605-665=	2,0mm	600	12,3+0,1
⑤ ca.52	10,5	1240-1250								
	4,0	1345-1375								
	1475	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
1200	68,5-69,5 (67,5-70,5)	1240-1250*	600	62,0 - 64,0 (61,0 - 65,0)	100	79,25-89,25 bei 15,6 - 16,0mm RW	-	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.81

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 GAN 9,7 a

1. Edition

En

PES 6 A 95 D 420 LS 2580 RSV 200-750 A7B 2071 R

supersedes -
company Ganz-Mavag
engine D 2196 HM6

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,0 - 2,1$
(1,95-2,15) mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
720	10,3+0,1	10,2 - 10,4	0,3(0,6)			
200	5,9-6,1	1,1 - 1,5	0,2(0,5)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque co	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca. 12	200	5,4-5,6	720	10,3-10,4
	x =	3,0					100	min. 10,0	375	10,3-10,5
ca. 40	9,3	760-770					200	5,9-6,1	250	11,5-12,1
⑤	4,0	765-795					295-355	2,0		
	925	0,3-1,7					400	max. 1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	rev/min	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
720	100,5-102,5 (98,5-104,5)	760-770*	-	-	100	19,0-21,0	-	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7 o

4. Edition

En

PES 6 A 90 D 410 RS 2293 Z RSV 575-1250 A 1 B 618 L

supersedes

company

engine

11.80

Daimler-Benz

OM 352 A

107 kW (145 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,10-2,30) 2,15-2,25 mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1230	11,2+0,1	7,4 - 7,5	0,3(0,45)			
575	7,4-7,6	2,0 - 2,4	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca.26	575	7,5	-	-
	X =	5,0					610	1,9-2,1		
							580-640	= 2,0		
ca.55	1260-1400	1270 = 10,2 = 0,3-1,7								
⑤										

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
1230	74,5-75,5 (72,5-77,5)	1265-1275	-	-	100	72,25-82,25 bei 13,8- 14,2mm RW			

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 HAN 10,8 e 1

2. Edition

En

PE 6 A 95 D 320 RS 2557 RSV 400-1100 A8B 1146 R

supersedes

7.81

company:

Hanomag

engine:

D 963

118 kW (160 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,15-2,25$
(2,1 - 2,3) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	10,3+0,	9,2 - 9,4	0,3(0,6)			
400	7,9-8,	3,6 - 4,2	0,3(0,5)			
700	11,3+0,	C, Sp. 4 u. 5	0,4(0,7)			
500	11,3+0,		0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800 x	0,3-1,0 = 5,0	-	-	-	ca. 21	400	7,5	1100	10,3-0,1
ca. 51							100	min. 19,0	835	10,7+0,2
⑤							400	7,9-8,1	500	11,3+0,1
	9,3	1140-1150					590-650	= 2,0mm		
	4,0	1165-1195					700	max. 1,0		
	1345	0,3- 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min						Control rod travel mm	
rev/min 1	cm ³ /1000 strokes 2	3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	9	
1100	90,0-92,0 (88,0-94,0)	1140-1150*	700	100,0-103,0 (98,0-105,0)	100	20,0-20,5 mm RW			
			500	90,5- 93,5 (88,5- 95,5)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.81

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Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7 m 1

1. Edition

En

PES 6 A 80 D 410 RS 2085X RSV350-1400A2B1052DL

supersedes -

company: Daimler-Benz

engine: OM 352

81 kW (110 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15-2,25
(2,1-2,3)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1400	9,2-9,3	5,1 - 5,2	0,2(0,35)			
350	7,4-7,6	0,9 - 1,5	0,2(0,3)			
500	10,4+0,2					
800	9,5-9,7	C, Sp. 4 u. 5	0,3(0,4)			
1000	9,2-9,3					

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca. 20	350	7,0	1400	9,2-9,3
	x	= 4,0					100		635	9,7-10,0
							350	7,4-7,6	400	10,2+0,1
							710-770	= 2,0mm		
⑤ ca. 55	8,2	1455-1465								
	4,0	1495-1525								
	1680	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	5	4	5	6	7	8	9
1400	51,0-52,0 (49,5-53,5)	1455-1465*	46,5-48,5 (45,0-50,0) 45,0-47,0 (43,5-48,5)	1000 500		100	79,5-89,5 bei 14,2- 14,6 mmRW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.81

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7 q 1

2. Edition

En

PES 6 A 90 D 410 RS2293 EP/RSV 350-1300 A0B1100D

supersedes 2.76
company Daimler-Benz
engine OM 352
88 kW (120PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,15-2,25) mm (from BDC)
(2,10-2,30)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1300	9,5+0,1	6,0 - 6,1	0,3(0,45)			
350	7,9-8,1	1,4 - 2,4	0,2(0,4)			
500/600/800	- Section C, col. 4-5		0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca. 56	1270 1300 1340	16,0 12,8 9,0	without auxiliary spring			ca. 18	350	8,0	1300	0
⑤	1330 1410 1500	ca. 9,8 ca. 4,1 0,3-1,0					200 350 500 670	19 - 21 7,9-8,1 2,1-4,8 0 - 1	600	0,3-0,5

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1300	60,0-61,0 (58,0-63,0)	1340-1350* (1335-1355)		600	48,5-50,5 (46,5-52,5)	100	13,7-14,3 mm RW		
				1410	3,5-4,5mmRW				

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.81

①

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 VOB 5,0 c

1. Edition

En

PES 6 A 85D320 RS 2160 RQV 300-1200 AB 743 R

supersedes

company:

engine:

Volvo-Bolinder
D 50 A

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,0-2,1$
(1,95-2,15) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	5,6-6,0	0,3			2,5± 0,1 (2,2-2,9)
200	6 9 9	0,1-0,6 1,8-2,5 0,9-1,6				

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1250 1300 1350 1430 1530	15,0-18,0 11,0-15,0 6,6-12,0 0- 7,0 0	-	-	-	ca. 12	250 350 450 550 670	6,0-8,2 3,7-5,9 2,2-3,8 0,9-2,3 0	250 550 900 1200	0-1,0 2,7-3,3 5,2-5,6 7,8

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery Idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1200	47,7-49,7	1220	500	41,0-44,0	100 300 max. 1,0	ca. 18mm RW 5,5-11,5 dispersion cm ³ /1000 H.	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

A9

BOSCH

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9.81

①

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 MB 5,7 u 4

1. Edition

En

PES 6 A 90 D 410 RS 2569 RQV 300-1400 AB 1112 L

supersedes

company:

Daimler Benz

engine:

OM 352

96 kW(131 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke (2,20-2,40)
2,25-2,35 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	10,5-10,6	6,1 - 6,3	0,3(0,45)			
300	5,5-5,7	1,1 - 1,7	0,2(0,4)			
1000/500	---	C, Sp.4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 65	1400 1700	15,2-17,8 0-1	-	-	-	ca. 11	100 300 540-600= 2,0	min. 7,1 5,5-5,7	300 500 1150	1,2 2,5-2,8 8,5
ca. 60	9,7 4,0	1440-1450 1550-1580				460-470				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery Idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7 RW	8	9 +0,1
1400	61,5-62,5 (59,5-64,5)	1440-1450*	1000	59,5-61,5 (57,5-63,5)	100	12,2-12,8	1400	10,5
			500	53,0-56,0 (51,0-58,0)			1000	10,7
							800	11,4
							500	11,7
						100-220(80-240)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

A10

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4.80

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MAN 11,1 p 8
3. Edition

En

PES 6 A 95 D 410 LS 2541 RQ 250/1100 AB 1107 L

supersedes 2.81
company: MAN
engine: D 2566 MUH/200
MUM/200

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $1,5 - 1,6$ mm (from BDC) Port closing mark cyl. 6
(1,45-1,65)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	9,6-9,8	9,2 - 9,5	0,4(0,6)			
250	6,9-7,1	0,9 - 1,5	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
Setting point		Test specifications				Test specifications				Control rod travel	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600	15,6-16,4	600	16,0	8,6	1145-1160	250	7,0	100	mind.8,4	1100	9,5- 9,6
								250	6,9-7,1	980	9,7-10,0
				4,0	1210-1240			450	max.1,0	885	10,6-10,8
1300	max. 1,0									600	11,1-11,2

Torque-control travel on flyweight assembly dimension a = 0,8 mm Speed regulation: At 1145-1160 min⁻¹ 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	Control rod travel mm 3a	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	Control rod travel mm 7 Control rod travel
1100	90,5 - 93,5 (88,5 - 95,5)			700	102,5 - 104,5 (100,5 - 106,5)	100	124,0 - 134,0 14,4 - 15,0
				500	102,5 - 106,5 (100,5 - 108,5)		

Checking values in brackets

8.81

A11

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②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MAN 11,1 p 11

1. Edition

En

PES 6 A 95 D 410 LS 2541 RQ 250/1100 AB 1123 L

supersedes

company MAN

engine: D 2566 MUH

147 KW (200 PS)

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,5 - 1,6
(1,45 - 1,65)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	11,0+0,1	11,0 - 11,2	0,3(0,6)			
250	6,4-6,6	1,2 - 1,8	0,3(0,5)			
700	12,4+0,1	C, Sp. 4 u. 5	0,4(0,7)			
500	12,4+0,2					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check ①		Full-load speed regulation ④				Idle speed regulation ⑤				Torque control ③	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	Setting point rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600	15,6-16,4	600	16,0	10,0	1145-1160	250	6,5	100	min. 7,9	1100	11,0+0,1
				4,0	1225-1255			250	6,4-6,6	930	11,3+0,3
1325	0 - 1,0							365-405	= 2,0 mm	850	12,0+0,2
								450	max. 1,0	600	12,4+0,1

Torque-control travel
on flyweight assembly dimension a =

0,65

mm

Speed regulation: At

1145-1160 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever ② Test oil temp. 40°C (104°F)		Control rod stop ③a		Fuel delivery characteristics ③b		Starting fuel delivery idle speed ⑥	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
1100	101,5 - 104,5 (99,5 - 106,5)	-		700	108,5 - 110,5 (106,5 - 112,5)	100	124,0 - 134,0 At 13,0 - 13,6 mm RW
				500	107,5 - 111,5 (105,5 - 113,5)		

Checking values in brackets

9.81

A12

A 12

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Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 12,8b1

1. Edition

En

PE 8 A 95 D 320 LS 2421

RQV 750 AB 966 R

supersedes

company MAN

engine: D 2538 MTE

RQV 750 AB 985 R

1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 je $45^\circ \pm 0,5^\circ (\pm 0,75^\circ)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $1,7-1,8$
 (1,65-1,85) mm (from BDC) Cyl. 8

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
725	12,6+0,1	12,7 - 12,9	0,3(0,6)			
200	6,4-6,6	1,5 - 2,1	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 411

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve to ①	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 29	11,6 4,0	745-755 765-785	-	-	-	-	-	-	-	-

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery idle switching point ⑥	Torque-control travel ⑤		
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
725	125,0-127,0 (126,0-129,0)	745-755*	-	-	-	-	-	-
					Adjust the damping device in the high idle-speed range from control-rod travel 4.5 mm to 4.6-4.7 mm.			

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ① and Governors

WPP00/1 MB 5,7 u 4

2. Edition

En

PES 6 A 90 D 410 RS 2569 RQV 300-1400 AB 1112 L

supersedes

company:

Daimler Benz

engine:

OM 352

96 kW(131 PS)

1 - 5 - 3 - 6 - 2 - 4 je 60°

Set intermediate speed stop at 3 bar and 700 min/1

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,20-2,40)

Port closing at prestroke

2,25-2,35

mm (from BDC)

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	10,5+0,1	6,1 - 6,3	0,3(0,45)			
300	8,5-8,7	1,1 - 1,7	0,2(0,4)			
1000/500	- - -	C, Sp. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1400 1700	15,2-17,8 0,1- 1	-	-	-	ca. 20	100 300 700	min. 10,1 8,5-8,7 0 - 1	300 500 1150	1,2 2,5-2,8 8,5
ca. 61	9,5 4,0	1440-1450 1550-1580				3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational speed limitation intermediate speed ②b	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9 +0,2
1400	61,5-62,5 (59,5-64,5)	1440-1450*	1000 500	59,5-61,5 (57,5-63,5) 53,0-56,0 (51,0-58,0)	100	72,25-82,25 14,5-14,9	1400 1000 800 500	10,5 10,9 11,2 11,7
					100-220(80-240)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.80

①

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 MB 5,7 u 5

1. Edition

En

PES 6 A 90 D 410 RS 2569 RQV 300-1400 AB 1065-2 DL

supersedes

company

engine

Daimler-Benz

OM 352

88,3 kW (120 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,20-2,40) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	9,8-9,9	5,45 - 5,55	0,3(0,45)			
300	8,2-8,4	0,9 - 1,5	0,2(0,4)			
500	11,0+0,1	4,65-4,95	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1400	15,2-17,8				ca. 28	300	8,3	300	1,2+0,1
	1630	0 - 1,0					100	min. 9,8	675	3,9+0,2
							300	8,2-8,4	450	8,0-8,1
ca. 62	8,8	1440-1450					550-610	2,0mm		
	4,0	1480-1510								

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics		Starting fuel delivery idle switching point	Torque-control	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8
1400	54,5-55,5 (52,5-57,5)	1440-1450*	500	46,5-49,5 (44,5-51,5)	100	72,25-82,25	1400
						RW (mm) 14,8-15,2	1000
							630
							500

Set stop at 3 - 3,5 mm control rod travel

Checking values in brackets

* 1 mm less control rod travel than col. 2

A18

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4.81

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 KHD 6,1 a 2

3. Edition

En

PES 6 A 85 D 410/3 RS 2415 RQV 750 A B 1004 L

Komb.-Nr. 0 400 836 016

supersedes 82

company KHD

engine: BF 6 L 913

70 kW / 1500 min⁻¹A power output -
10% above rated output

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $\frac{1,90-2,00}{(1,85-2,05)}$ mm (from BDC) RW = 9,0 - 12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
720	12,3+0,1	8,4 - 8,5	0,3(0,45)			

Adjust the fuel delivery from each outlet according to the values in .
Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
			-	-	-	-	-	-	-	-
ca. 25	11,3 4,0 820	760-765 789-799 0-1,0								

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed limitation intermediate speed (2b) (4a)	Fuel delivery characteristics (5a) high idle speed (5b)		Starting fuel delivery Idle switching point (6)		Torque-control travel (5) Control rod travel mm	
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
720	84, 0-85, 0 (82, 0-87, 0)	760-765 *	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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Testoil-ISO 4113

PE 10A90D520/5 LS 2567 ROV250-1250 AB 1075R

10 - 9 - 4 - 1 - 8 - 7 - 6 - 3 - 5 - 2

$$0 - 45-72-117-144-189-216-261-288-333 \pm 0,5^{\circ} (\pm 0,75^{\circ})$$

superabs80

CONSIDER MAN

D 2530 MFX

engine: 235 kW (320 PS)

Komb.-Nr. 0 400 649 215

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(1,45-1,65)

Port closing at prestroke 1,50-1,60 mm (from BDC) Cyl. 10; RW=9,0 - 12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	12,6-12,7	10,1 - 10,3	0,3(0,45)			
250	7,2-7,4	0,7 - 1,3	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1250	15,2-17,8	-	-	-	ca. 12	100	min. 8,8	1290	8,3
							250	7,2-7,4		
							385-445 = 2,0			
ca. 47	11,6	1290-1300								
	4,0	1390-1420								
	1550	0 - 1,0								
						340-450				
						(3a)				

Torque control travel a = _____ mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed limitation intermediate speed (2b) (4a)		Fuel delivery characteristics high idle speed (5b)		Starting fuel delivery Idle switching point (6)		Torque-control travel (5)	
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
1250	101,5-102,5 (99,5-104,5)	1290-1300*	800	95,5-98,5 (93,5-100,5)	100	135,0-145,0 (132,0-148,0)	1250	12,6+0,1	
			500	max. 89,0 (max. 91,0)		=18,3-18,7 mm RW	1120	12,7+0,3	
							955	13,1+0,2	
							500	13,3+0,1	
						100-170(80-190)			

Checking values in brackets

- 1 mm less control rod travel than col. 2

2.83

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 11,1 b 2

1. Edition

En

Testoil-ISO 4113

PES 6 A 95 D 410 LS 2409

RQV 250-1150 AB 868D

supersedes

company MAN

D 2556 MXF

engine 200 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,3 +0,1 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	7,4 - 8,0	0,4			
	6	3,2 - 4,2				
200	6	0,5 - 1,4				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed				Intermediate rated speed				Lower rated speed				Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	①a ②a	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	④	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	③	rev/min 10	mm 11 ①
ca. 50	1170 1220 1280 1350	14,4-17,4 9,0-14,0 1,0- 7,8 0		-	-	-		ca. 13	50 150 250 350 410	7,7-10,8 6,8- 9,6 4,2- 7,1 0 - 3,0 0		200 480 800 1180 1280 1350	0,5-1,2 3,2-4,0 5,0-5,4 8,4 end
								③a					

Torque control travel a = 0 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed limitation intermediate speed (2b) (4a)	Fuel delivery characteristics high idle speed (5a) (5b)		Starting fuel delivery idle switching point (6)		Torque-control travel (5) Control rod travel mm	
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
1150	121,5-123,5	1190-1205*	500	max. 118,5	100 250	12-13 mm RW 7 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

3.81

Test Specifications Fuel Injection Pumps ① and Governors

PES 6 A 95 D 410 LS 2542
Kombi.-Nr. 0 400 846 471

RQV 250-1100 AB 1134 L

supersedes 10.83

company: MAN

engine: D 2566 ME/Fendt
162 kW/2200 min⁻¹
MAN-Nr. 2-7196

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,5 - 1,6
(1,45-1,65) mm (from BDC) Cyl. 6; RW = 9,0-12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	12,5+0,1	12,6-12,8	0,35(0,6)			
250	7,5-7,7	0,9-1,5	0,35(0,5)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1100	15,2-17,8	-	-	-	ca. 14	100	min. 9,1	200	0,7-0,9
ca. 48	10,2	1140-1150					250	7,5-7,7	500	3,7-4,1
	4,0	1175-1205					440	max. 1,0	800	5,4-5,7
	1300	0-1,0							1100	8,1

Torque control travel a = 1,3 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed		Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
900	126,0-128,0 (124,0-130,0)	1140-1150*	1100	111,5-115,5 (109,5-117,5)	100	125,0-135,0 (122,0-138,0)	1100	11,2+0,1	
			500	113,5-117,5 (111,5-119,5)		= 15,4-16,0 mm RW	500	12,5+0,1	
							940	12,1+0,1	
							1025	11,4+0,3	

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 11,1 b 1

1. Edition

En

Testoil-ISO 4113

PES 6 A 95 D 410 LS 2409, Y, Z

RQV 250-1150 AB 850 DL

supersedes

company **MAN**

PES 6 A 95 D 410 LS 2409

RQV 250-1150 AB 847DL

engine: D 2556 MX, MXF

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,3 +0,1 mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1000	9	7,4 - 8,0	0,4			
	6	3,2 - 4,2				
200	6	0,5 - 1,4				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

847 DL, 850 DL

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 50	1170	14,4-17,4	-	-	-	ca. 13	50	7,7-10,8	200	0,5-1,2
	1220	9,0-14,0					150	6,8-9,6	480	3,2-4,0
	1280	1,0- 7,8					250	4,2-7,1	800	5,0-5,4
	1350	0					350	0 -3,0	180	8,4
							410	0	280-	
									350	end

Torque control travel a = 0,4 mm / n = 500-750 min⁻¹

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1150	117,5-119,5	1190-1205*	800	116,0-119,0	100	12-13 mm RW		
"Y"			500	max. 118,5	250	7 mm RW		
1150	103,0-105,0		800	105,5-108,5				
"Z"			500	max. 103,5				
1150	93,5- 95,5		800	95,0- 98,0				
			500	max. 91,5				

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7 u 1

2. Edition
En

PES 6 A 90 D 410 RS 2569 RSV 350-1300 AOB 1130 L

1 - 5 - 9 - 6 - 2 - 4 je 60°

supersedes

10.79

company:

Daimler-Benz

engine

OM 352 A

(92 kW - 125PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,25-2,35$ mm (from BDC)
($2,20-2,40$)

Rotational speed rev/min 1	Control rod travel mm 2 +0,1	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	10,9	6,3 - 6,4	0,3(0,45)			
350	8,2-8,4	0,5 - 1,1	0,2(0,4)			
500	- - -	C. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
lose	800	0,3-1,0				ca. 24	350	6,6	1300	10,9-11,0
	x	= 4,25					100	min. 19		
ca. 61	1340-1440	1350 = 9,9 1470 = 4,0					350	8,2-8,4	500	11,5-11,6
⑤	1550	= 0,3 - 1,7					595-655	= 2,0	900	11,3-11,5
							800	0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min						Control rod travel mm	
rev/min 1	cm ³ /1000 strokes 2	3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	9	
1300	63,5-64,5 (61,5-66,5)	1340-1350*	500	48,5-51,5 (46,5-53,5)	100	79,25-89,25			

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 00/1 MB3,8n5

1. Edition

En

PES 4 A 90 D 410 RS 2570

1 - 3 - 4 - 2
0 - 90 - 180 - 270

supersedes -

company: Daimler-Benz
engine: OM 314
48 kW (65 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,20-2,40) mm (from BDC) RW 10,5
2,25-2,35

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1200	9,9	4,7 - 4,8	0,3(0,25)			
350	+ 0,1 8,9-9,1	0,9 - 1,5	0,2(0,25)			
500	- - -	C. Sp.4-5	0,4(0,3)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 21	350	8,5		
	x =	3,5					350	8,9-9,1		
⑤ ca. 46	1240-	1250 = 8,9					590-650 = 2,0			
	1280-	1310 = 4,0					700 0 - 1			
	1450 =	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	+0,1
1200	47,0-48,0 (46,0-49,0)	1240-1250*	500	43,5-45,5 (42,5-46,5)	100	79,25- 89,25 17,0-17,4 mm RW	1200 815 500	9,9 10,7 11,3	

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.80

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4
1. Edition

En

PE 12 A 90 D 521 RS 2513 RSV 325 - 1500 A 5 B 642 DR

1 - 4 - 9 - 8 - 5 - 2 - 11 - 10 - 3 - 6 - 7 - 12
0-15-60-75-120-135-180-195-240-255-300-315

supersedes
company
engine

Baudouin
DF 12

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,15-2,25}{(2,10-2,30)}$ mm (from BDC) / RW = 10,5 mm

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1480	14,3+0,1	8,9 - 9,0	0,3(0,45)			
325	8,6-8,8	1,1 - 1,7	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque contr	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800 =	0,3 - 1,0				ca. 20	325	8,2	1480	14,3-14,4
ca. 64 ⑤	1520-1530 =	13,3					100	min. 19,0	300	15,1-15,3
	1580-1610 =	4,0					600	max. 1,0		
	1700-	0,3 - 1,7					325	8,6-8,8		
							450-510	0 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9	
1480	89,0-90,0 (87,0-92,0)	1520-1530*					325	8,7	

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 SCL 9,8a

1. Edition

En

PE 8 A 95 D 410 RS 2615

RSV 325-1100 A 1 B 2112 L

supersedes

company

engine

Schluter

SDMT 112 W 8

1 - 4 - 7 - 6 - 8 - 5 - 2 - 3
0 -45 -90 -135-180-225-270-315

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,95-2,15) mm (from BDC) RW 10,5 Cyl. 1
2,00-2,10

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1100	12,0	10,4 - 10,6	0,3(0,6)			
325	+0,1 7,4-7,6	1,1 - 1,5	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 22	325	7,0		
	x =	3,75					100	min. 19,0		
ca. 54							325	7,4-7,6		
⑤	1140-1150	= 11,0					505-565	= 2,0		
	1165-1195	= 4,0					625	0 - 1,0		
	1370	= 0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...							
rev/min	cm ³ /1000 strokes	rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1100	103,0-105,0 (101,0-107,0)	1140-1150*				100	19-21 mm RW	325	7,5

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.80

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 SCL 9,5b

1. Edition

En

PES 6 A 95 D 410 RS 2614

RSV 325-1100 A 1 B 2111 L

supersedes

company

engine

Schlueter

SDMT 110 W 8

1 - 5 - 3 - 6 - 2 - 4

0 -60 -120-180-240-300

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(1,80-1,90)

mm (from BDC)

RW 10,5

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,6	10,9 - 11,1	0,3(0,6)			
325	+0,1 7,4-7,6	0,9 - 1,5	0,3(0,5)			
500	----	C, Sp. 4-5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11 +0,1
loose	800	0,3-1,0				ca.27	325	7,0	1100	12,6
	x =	5					100	min.19	785	12,7
							325	7,4-7,6		
							625	0 - 1	500	13,0
ca.61	1140-	1150=11,6								
⑤	1190-	1220= 4,0								
	1385=	0,3- 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9	
1100	108,0-110,0 (106,0-112,0)	1140-1150*	500	102,5-105,5 (100,5-107,5)	100	19-21mmRW	325	7,5	

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.80

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,702

1. Edition

En

PES 6 A 90 D 410 RS2293

RSV 575-1100 A1B618L

supersedes

company:

Daimler-Benz

engine:

OM 352

110 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,10-2,30)

Port closing at prestroke

2,15-2,25

mm (from BDC)

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,7 - 5,0	0,4			
200	6	2,0 - 2,6				
	12	7,5 - 8,2				
	9	2,2 - 2,8				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
⑤ ca.49	1100	16,0	without auxiliary spring			ca.25	575	6,0		
	1120	11,8					200	19 - 21		
	1140	6,5					575	5,7-6,3		
	1120	9,0-11,0	620				2,1-4,0			
	1160	3,0- 5,3	700				0 -1,5			
	1220	0- 1,5								
			with auxiliary spring							

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
1080	56,5-58,5	1115-1125*			100	ca. 7,25	575	6,0	
					1140-1150 = 3,5		mmRW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.80

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 EIC 3,9 a

2. Edition

En

PES 6 A 80 D 320 RS 1280 RSV 300-1050 A 1 B 671 DR

1 - 5 - 3 - 6 - 2 - 4
0 -60 -120-180-240-300

supersedes 4.73
company: Eicher
engine: EDK 6-3
73,5 kW(100PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,10-2,30)

Port closing at prestroke 2,15-2,25 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1030	9,7-9,8	5,4 - 5,5	0,2(0,35)			
300	7,4-7,6	1,1 - 1,5	0,2(0,3)			
800/500	- - -	C, Sp.4-5	0,3(0,4)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 31	300	5,5	1030	9,7
	x	6,0					300	5,9-6,1	775	9,9
ca. 61	1070	-1080=8,7					100	min. 19,0	500	10,1
⑤	1100	-1130=4,0					470-	530 = 2,0		
	1285	=0,3 -1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1030	54,5-55,5 (53,0-57,0)	1070-1080*		800	52,0-55,0 (50,5-56,5)	100	16,5-17,1 mm RW	300	6,0
				500	48,5-50,5 (47,0-52,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 DAF 8.3 i 1

1. Edition

En

PE 6 A 90 D 410 RS 2524 RSV 250-1200 A 5 B 2012 DL

supersedes --

company: DAF

engine: DM 825

** Cold-start test on EP/RSV governor according to Service Information

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,25-2,45)

Port closing at prestroke 2,30-2,40 RW 9 mm (from BDC)

Port closing difference between control-rod travel 9 and max. 4,5-5,5°

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9,4-9,5	7,0 - 7,1	0,3(0,45)			
250	6,5-6,7	0,9 - 1,5	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0				ca.22	250	5,5	1000	9,4-9,5
	x =	4,5					100	min.19	600	9,4-9,6
ca.54	1240-	1250 = 8,4					250	5,9-6,1	300	10,2-10,5
⑤	1275-	1305 = 4,0					350-	410=2,0		
	1500=	0,3-1,7					500	0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min						Control rod travel mm	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
1000	70,0-71,0 (68,0-73,0)	1240-1250*			100	19-21**			

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.80

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4

1. Edition

En

PES 3 A 85 D 310 RS1327 RSV 250-1200 A1 B1115L

supersedes -

company:

S t e y r

engine:

WD 308.45

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,10-2,20}{(2,05-2,25)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	10,6 +0,1	6,6 - 6,7	0,3(0,45)			
250	5,9-6,1	0,9 - 1,5	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque contr	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm +0,1 11
loose	800 x	0,3-1,0 = 4,0				ca. 21	250 100 250 415-475 550	5,5 min. 19 5,9-6,1 = 2,0 0- 1	1200 250	10,6 10,6
⑤ ca. 62	9,6 4,0 1400	1240-1250 1255-1285 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1200	66,5-67,5 (64,5-69,5)	1240-1250*				100	94,5-104,5		

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.79

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 3,8n1

2. Edition

En

PES 4 A 90 D 410 RS 2570 RSV 350-1300 A 2 B 1126 DL

supersedes

company:

engine:

1.80

Daimler-Benz

OM 314

55 kW(75 PS)

1 - 3 - 4 - 2
0 -90 -180-270 ± 0,50 (0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,25-2,35
(2,20-2,40) mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1130	10,5-10,6	5,2 - 5,4	0,3(0,45)			
350	5,9-6,1	1,2 - 1,8	0,2(0,4)			
600/900/ 1150		C, Sp. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,8-1,0				ca. 20	350	5,5	1300	10,5-10,6
	x =	4,0					350	5,9-6,1	1150	10,5-10,6
							670-730	= 2,0	1050	10,8-11,0
ca. 51	1340-1425	350=10,5 455= 4,0							900	11,3-11,4
⑤	1630	=0,3-1,7							600	11,3-11,4

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
1300	52,5-54,5 (50,5-56,5)	1340-1350*	600	50,0-52,0 (48,0-54,0)	100	79,25-89,25	350	6,0	
			900	55,5-57,5 (53,5-59,5)					
			1150	52,5-54,5 (50,5-56,5)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.80

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7 u 1

1. Edition

En

PES 6 A 90 D 410 RS2569 RSV 350-1300 AO B1130L

supersedes -
company: Daimler-Benz
engine: OM 352 A
(92 kW-125PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,25-2,35}{(2,20-2,40)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	11,2-11,3	6,1 - 6,3	0,3(0,45)			
350	5,9-6,1	1,2 - 1,6	0,2(0,4)			
500	- - -	C, 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
Loose	800	0,3-1,0				ca. 24	350	5,5	1300	11,2-11,3
	x =	4,25					100	min. 19	820	11,3-11,5
ca. 61	1340	-1350=9,8					350	5,9-6,1	500	11,6-11,7
⑤	1385	-1415=4,0					595-	655=2,0		
	1570	=0,3-1,7					800	0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
1300	61,5-62,5 (59,5-64,5)	1340-1350*	500	53,0-56,0 (51,0-58,0)	100	71,25-81,25			

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 8,7 k

1. Edition

En

PE 6 A 90 D 410 RS 2124 RSV 350-1250 A 1 B 750 D

6 - 2 - 4 - 1 - 5 - 3
0 -60 -120-180-240-300

supersedes -

company: Daimler-Benz

engine: OM 360

192 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,10-2,30)
2,15-2,25 mm (from BDC)

Testoil-ISO 4113

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1000	9	6,4 - 6,9	0,4			
	6	2,8 - 3,8				
200	15	13,8 - 15,3				
	9	3,7 - 4,9				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca. 64	1250 1280 1320	16,0 12,0 5,4	without auxiliary spring			ca. 23	350	6,1		
⑤ ca. 63							200	19 - 21		
			with auxiliary spring				350	5,8-6,4		
							450	2,6-4,2		
	1230 1300 1430	ca. 10,1 ca. 9,0 0,3-1,0					600	0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	5	4	5	6	7	8	9
1230	85,5 - 87,5	1270-1280*	800	83,5 - 86,5	100	ca. 11,25			

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7 0 1

1. Edition

En

PES 6 A 90 D 410 RS2293

RSV 575-1250 A 1 B 618 L

supersedes -

company:

Daimler-Benz

engine:

OM 352

120 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,10-2,30)

Port closing at prestroke

2,15-2,25

mm (from BDC)

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,7 - 5,0	0,4			
200	6	2,0 - 2,6				
	12	7,5 - 8,2				
	9	2,2 - 2,8				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
ca. 52	1230 1270 1295	16,0 9,0 3,6	without auxiliary spring			ca. 28	575	6,5		
⑤	1260 1295 1320	ca. 10,0 ca. 3,6 0,3 - 1,0					200 575 620	19-21 6,2-6,8 0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery: idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1230	60,5-62,5	1265-1275*				100	ca. 7,25	575	6,5
						1290	-1305 = 3,5 mm RW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.80

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4

1. Edition

En

PES 4 A 80 C 410 RS 2289 RSV 250-750A7B 506/11

supersedes -

company Slanzi
engine DVA 2900

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15-2,25 mm (from BDC)

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,5 - 4,8				
	6	2,0 - 2,6				
	15	9,3 - 10,3				
200	6	0,5 - 1,1				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca.47 ⑤	750	16,0	without auxiliary spring			ca.22	250	6,0	730	0
	780	12,3					300	12,-1,8		
	820	6,2								
	with auxiliary spring									
					800				5,0-9,0	
850					1,4-3,0					
920	0,3-1,0									

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...							
rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3	5	4	5	6	7	8	9
Full load RW 10,5									

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.80

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7w5

2. Edition

En

PES 6 A 90 D 410 RS 2569 RSV 350-1400 A0B 1135 L

supersedes 2.81

company: Daimler-Benz

engine: OM 352

92 kW(125 PS)

1 - 5 - 3 - 6 - 2 - 4

0 - 60-120-180-240-300° $\pm 0,5^\circ$ ($\pm 0,75^\circ$)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,25-2,40)

RW 10,5

Port closing at prestroke

2,25-2,35

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	10,8+0,1	6,2 - 6,3	0,3(0,45)			
350	7,9-8,0	0,5 - 1,1	0,2(0,4)			
500	11,3+0,1	C, Sp. 4-5	0,4(0,55)			
900	10,7+0,3	C, Sp. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0				ca. 21	350	4,1	1400	10,8+0,1
	x =	5,0							750	10,8+0,3
							350	7,9-8,0	500	11,3+0,1
ca. 70 ⑤	1440-	1450=9,8					580-	640=2,0		
	1495-	1525=4,0								
	1650=	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
1400	62,5-63,5 (60,5-65,5)	1440-1450*	500	44,5-47,5 (42,5-49,5)	100	79,25-89,25			
			900	53,5-56,3 (51,5-58,5)		16,2-16,6 mmRW			

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.81

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7 u 1

2. Edition

En

PES 6 A 90 D 410 RS2569

RSV 350-1300 A0 B1130L

supersedes

10.79

company:

Daimler-Benz

engine:

OM 352 A

(92 kW -125 PS)

1 - 5 - 3 - 6 - 2 - 4

0 -60 -120-180-240-300

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,25-2,35

(2,20-2,40)

mm (from BDC)

RW 10,5

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	10,9	6,3 - 6,4	0,3(0,45)			
350	+ 0,1 8,2-8,4	0,5 - 1,1	0,2(0,4)			
500	- - - -	C, 4 - 5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0				ca. 24	350	6,6	1300	10,9-11,0
	X =	4,25					100	min. 19	900	11,3-11,5
ca. 61 ⑤	1340- 1440- 1550=	1350=9,9 1470=4,0 0,3-1,7					350 670- 800	9,5-9,7 730=2,0 0 - 1	500	11,5-11,6

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
1300	63,5-64,5 (61,5-66,5)	1340-1250*	500	48,5-51,5 (46,5-53,5)	100	15,8-16,2 mm RW 79,25- 89,25	350	9,6	

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.80

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 3,8 n

2. Edition

En

PES 4 A 90 D 410 RS 2570 RSV 350-1400 A0 B 2070 L

** Set idle-speed auxiliary spring at 2,0 mm control-rod travel.

supersedes 10.79
company Daimler-Benz
engine OM 314
62 kW (84PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,25-2,35$
(2,20-2,40) mm (from BDC) RW 10,5

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1380	11,9-12,0	6,15-6,25	0,3(0,45)			
350	8,8-9,0	0,4-1,0	0,2(0,4)			
900	---	C, 4-5	0,4(0,55)			
600						

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11 ±0,1
100se	800	0,3-1,0				ca. 24	350	8,9	1380	11,9
	X	4,25					440-	500=2,0	600	12,8
ca. 57	1420-	1430=10,9							900	12,6
⑤	1485-	1505= 4,0								
	1600=	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	3		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2			4	5	6	7	8	9
1380	61,5-62,5 (59,5-64,5)	1420-1430*		900	55,5-58,5 (53,5-60,5)	100	14,6-15,0 mm RW		
				600	52,0-54,0 (50,0-56,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.81

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 6,7 w2

1. Edition

En

PES 6 A 90 D 410 RS 2569 RSV 350 - 1400 AO B 1136 L

1 - 5 - 3 - 6 - 2 - 4
0 - 60 - 120 - 180 - 240 - 300

supersedes

company

engine

-
Daimler-Benz
OM 352
81 kW(110 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,20-2,40) mm (from BDC) RW 10,5
2,25-2,35

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1400	9,6-9,7	4,8 - 4,9	0,2(0,25)			
350	7,9-8,1	0,7 - 1,3	0,2(0,25)			
500	- - -	C, Sp. 4-5	0,25(0,3)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 18	350	7,5	1400	9,6-9,7
									500	10,3-10,4
⑤ ca. 62	1440-1470-1650=	1450 =8,6 1500 =4,0 0,3-1,7					350-590-	7,9-8,1 =2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.	③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min						
rev/min	cm ³ /1000 strokes	3	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2		4	5	6	7	8	9
1400	48,5-49,5 (47,5-50,5)	1440-1450*	500	39,0-42,0 (38,0-43,0)	100	74,25-84,25	350	8,0

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.80

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 8,7i

4. Edition

En

PE 6 A 90 D 410 RS 2124 RSV 700-1150 A 1 B 665 L

1 - 5 - 3 - 6 - 2 - 4 je 60°

supersedes 3.75
company Daimler-Benz
engine OM 360
125 kW (170 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,10-2,30)

Port closing at prestroke

2,15-2,25

mm (from BDC)

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	10,6-10,7	8,7 - 8,8	0,3(0,45)			
700	5,6-5,8	1,7 - 2,3	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	900	0,3-1,0				ca. 31	700	5,2		
ca. 53 ⑤	1160-1250	1170=9,6 =0,3-1,7					700 690-	5,6-5,8 750=2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.	③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min						
rev/min 1	cm ³ /1000 strokes 2	3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1150	87,5-88,5 (85,5-90,5)	1160-1170*						

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.80

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 3,8 n 6

1. Edition

En

40

PES 4 A 90 D 410 RS 2570

RQV 300-1400 AB 1065-3DL

supersedes

company:

engine:

Daimler-Benz

OM 314

57 kW (77 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Testoil-ISO 4113

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	9,5-9,6	5,9 - 6,0	0,3(0,45)			
300	8,2-8,4	0,9 - 1,5	0,2(0,4)			
400	10,5+0,1	C, Sp.4 u. 5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1400 1650	15,2-17,8 0 - 1,0	-	-	-	ca.20	100 300	min.9,8 8,2-8,4	250 600 1000 1400	0,7-0,9 3,3-3,8 5,2-5,3 7,7
ca.58	8,5 4,0	1440-1450 1520-1550				③a	570-630=2,0mm			

Torque control travel a = 1,0 mm

Set stop at 3 - 3,5 mm control rod travel. Stop travel min. 2.0 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics high idle speed ⑤a		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min	cm ³ /1000 strokes	rev/min ④a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1400	59,0-60,0 (57,0-52,0)	1440-1450*	400	44,0-46,0 (42,0-48,0)	100	72,25-82,25	1400 1000 600 400	9,5+0,1 9,8+0,2 10,1+0,2 10,5+0,1

Checking values in brackets

* 1 mm less control rod travel than col. 2
5.81

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 HAN 7,2 a

1. Edition

En

PE 4 A 95 D 420 RS2365

EP/RSV 350-1100 A8 B1104DR

supersedes -

company

Hanomag-MF

engine

D 943

1 - 2 - 4 - 3 $\pm 0,50$ 0 - 90-180-270° ($\pm 0,75$)

** Test cold-start device according to I-DAF 004, page 2.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,15-2,25}{(2,10-2,30)}$ mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1100	10,0	9,4-9,6	0,3(0,6)			
	+ 0,1					
350	6,7-6,9	1,4-2,0	0,3(0,5)			
700/500	- - -	C, 4-5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	10	11 +0,1
loose	800	0,3-1,0				ca. 25	350	5,5	1100	10,0
	x	4,5					100	min. 19	1010	10,5
							350	5,9-6,1		
ca. 55	9,0	1140-1150					490-	550=2,0	500	10,9
⑤	4,0	1175-1205					650	0 - 1		
	1360	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	mm
(3)	93,0-95,0 (91,0-97,0)	1140-1150*	700	99,5-103,0 (98,0-105,0)	100	20-20,5 mm RW**			
			500	92,0- 94,0 (90,0- 96,0)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 3,8n1

1. Edition

En

PES 4 A 90 D 410 RS 2570

RSV 350-1300 A 2 B 1126 DL

supersedes

company:

Daimler-Benz

engine

OM 314

55 kW(75PS)

1 - 3 - 4 - 2

0 - 90 - 180 - 270 ± 0,50 (0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{2,25-2,35}
(2,20-2,40) mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1300	10,5-10,6	5,2 - 5,4	0,3(0,45)			
350	5,9-6,1	1,2 - 1,8	0,2(0,4)			
600/900/ 1150		C, Sp. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque con	
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 20	350	5,4-5,6	1300	10,5-10,6
	x =	4,0					350	5,9-6,1	1150	10,5-10,6
ca. 51	1340-	1350=10,5					670-730=2,0		1050	10,8-11,0
⑤	1390-	1420= 4,0							900	11,3-11,4
	1630=	3,0-1,7							600	11,3-11,4

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
1300	52,5-54,5 (50,5-56,5)	1340-1350	600	50,0-52,0 (48,0-54,0)	100	79,25 - 89,25	350	6,0	
			900	55,5-57,5 (53,5-59,5)					
			1150	52,5-54,5 (50,5-56,5)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

1.80

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 DAF 8,3 i 2

1. Edition

En

PE 6 A 90 D 410 RS 2524 RSV 250-900 A7B 2060 DL

supersedes -
company: DAF
engine: DH 825

** Cold-start test on EP/RSV governor according to Service
Information

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,25-2,45)

2,30-2,40RW 9

mm (from BDC)

Port closing difference between
control-rod travel 9 and max. 4,5-5,5°

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
900	10,3 + 0,1	8,0-8,1	0,3(0,45)			
250	6,5-6,7	0,9-1,5	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm ±0,1
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 18	250	5,5	500	10,3
ca. 53							100	min. 19	300	11,2
⑤							250	5,9-6,1		
							290-350	= 2,0		
							450	0 - 1		
	940-950	= 9,3								
	945-975	= 4,0								
	1100	= 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
900	80,5-81,5 (78,5-83,5)	940-950*				100	19 - 21**		

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.80

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7 o 3

1. Edition

En

PES 6 A 90 D 410 RS 2293 RSV 575-1250 A8B614

supersedes -
company Daimler Benz
engine OM 352
125 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,10-2,30)
Port closing at prestroke 2,15-2,25 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,7 - 5,0	0,4			
	6	2,0 - 2,6				
	12	7,5 - 8,2				
200	9	2,2 - 2,8				

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
ca. 52	1250 1280 1310	16,0 11,2 6,0	without auxiliary spring			ca. 23	575	5,5	1230	0
⑤	1290 1350 1430	8,0-11,0 2,3- 4,2 0- 1,5					200 575 650 730	19 - 21 5,2-5,8 1,8-3,4 0 -1,5	600 500	0 0,2-0,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1230	60,0-62,0	1260-1270*				100	ca. 7,25	575	5,5
						1315-1335	= 3,5 mm RW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 KHD 5,1 d 1

1. Edition

En

PES 5 A 80 D 410 RS 2526

RSV 325-1075 A1B 1111 DL

Komb.-Nr. 9 400 093 228

1-3-5-4-2- je $72^\circ \pm 0,5^\circ (\pm 0,75^\circ)$

supersedes -

company

Deutz Argentinien

engine

F 5 L 913

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $1,9-2,0$ mm (from BDC)
 $(1,85-2,05)$

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1075	9,4-9,5	5,3-5,4	0,25 (0,4)			
325	6,4-6,6	0,6- 0,9	0,2 (0,35)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed 4 5 6			4 Lower rated speed Control-lever deflection in degrees rev/min 7 8 9			3 Torque control Control rod travel rev/min 10 11	
Control rod travel mm 2	Control rod travel mm rev/min 3					Control rod travel mm 9			Control rod travel mm 11	
loose	800 0,3-1,0 x = 6,25		-	-	-	ca. 32	325 6,0		1075 9,4-9,5	
ca. 65	8,4 1115-1125 4,0 1150-1180 1300 0,3-1,7						100 min.19,0 325 6,4-6,6 510-570 = 2,0		500 11,2-11,3 800 10,4-10,7	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp. 40°C (104°F) rev/min 1		6 Rotational-speed limit Note changed to) rev/min 3		3a Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle rev/min 6		5 Idle stop Control rod travel mm 8 9	
cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes 7			
1075	52,5-53,5 (50,5-55,5)	1115-1125*		500 61,5-63,5 (59,5-65,5) 800 57,0-59,0 (55,0-61,0)		100 19,0-21,0 mm RW		-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

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12.85

C7

(7)

Test Specifications Fuel Injection Pumps and Governors

WPP 00/1 MB 5,7v6

En

1. Edition

supersedes

company

Daimler-Benz

engine

OM 352

88 kW(120PS)

PES 6 A 90 D 410 RS 2569

RSV 575-1250 A 1 B 618L

1 - 5 - 3 - 6 - 2 - 4

0 - 60 - 120 - 180 - 240 - 300

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,20-2,40)
2,25-2,35

mm (from BDC)

RW 10,5

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1230	12,0	6,1 - 6,2	0,3(0,25)			
575	+0,1 8,4-8,6	0,8 - 1,4				

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
Loose	800	0,3-1,0				ca.28	575	6,5		
	x =	3,75					100	min.19		
							650	0 - 1		
ca.58	1250-	1260=11,0					575-	685=2,0		
⑤	1275-	1295= 4,0								
	1435=	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1230	61,5-62,5 (60,5-63,5)	1250-1260**				100	79,25- 89,25 14,7-15,3 mm RW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.80

Test Specifications Fuel Injection Pumps and Governors

WPP 00/1 MB 5,7 v 3

1. Edition

En

PES 6 A 90 D 410 RS 2596 RSV 575-1250 A 1 B 618 L

1 - 5 - 3 - 6 - 2 - 4
0 -60 -120-180-240-300

supersedes -
company: Daimler-Benz
engine: OM 352 A
106 kW(144PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,95-2,15) mm (from BDC) RW 10,5
2,00-2,10

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1230	13,2	7,7 - 7,8	0,3(0,45)			
	+0,1					
575	7,2-7,4	0,8 - 1,4				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque con...	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0				ca.29	575	7,3		
	x =	4,0					100	min.19,0		
							575	7,2-7,4		
							675	1,0		
⑤ ca.60	1250-1260=12,2						585-645 = 2,0			
	1275-1295= 5,5									
	1445=0,3-1,7									

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
1230	77,5-78,5 (75,5-80,5)	1250-1260*			100	16,0-16,6 mm RW 79,25- 89,25			
					575	9,25-15,25			

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 EIC 3,9 c

2. Edition

En

PES 4 A 80 D 420 RS 1278 RSV 300-1000 A 1 B 643 DR

supersedes Bez.auf EIC 3,9a
company: EIC 3,9c
engine: EDK 4-10
55 kW (75PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,10-2,30)

2,15-2,25

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
980	10,7+0,1	6,7-6,8	0,2(0,35)			
300	7,4-7,6	1,1-1,5	0,2(0,3)			
500	- - -	C, Sp.4-5	0,3(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque contro.	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11 +0,1
100se	800	0,3-1,0	-	-	-	ca.29	300	5,5	980	10,7
	x	4,7					100	min.19,0	450	10,7
ca.57	1020-1030 = 9,7						300	5,9-6,1		
⑤	1055-1085 = 4,0						500	max.1,0		
	1230 = 0,3-1,7						370-430 = 2,0			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
980	68,0-69,0 (66,5-70,5)	1020-1030*	500	60,0-62,0 (58,5-63,5)	100	16,5-17,1 mm RW	300	6,0	

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.80

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 EIC 5,9 a

4. Edition

En

PES 6 A 80 D 320 RS 1280 RSV 300-1150 A0B 2005 R

1 - 5 - 3 - 6 - 2 - 4 je 60°

supersedes

company:

engine:

4.78

Eicher

EDK 6-5

99 kW(135 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,10-2,30)

2,15-2,25

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1130	10,6-10,7	6,4-6,5	0,2(0,35)			
300	7,4-7,6	1,3-1,9	0,2(0,3)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca.30	300	5,5		
ca.54 ⑤	x =	5,3					100	min.19,0		
							300	5,9-6,1		
	1170-1	80=9,6					495-555	= 2,0		
	1230-1	260=4,0					650	0 - 1		
	1425=0	3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
1130	65,0-66,0 (63,5-67,5)	1170-1180*			100	16,0-16,6	300	7,5	

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.80

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 HAN 10,8 f

1. Edition

En

PE 6 A 95 D 320 RS 2557 Z RSV 350-1100 A 8 B 1127 R

supersedes -

company

MF Hanomag

engine

D 963 A1 - D700

1 - 5 - 3 - 6 - 2 - 4 je 60°

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,10-2,30)

2,15-2,25

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1100	12,6-12,7	12,1-12,3	0,3(0,6)			
350	6,9-7,1	1,1- 1,6	0,3(0,5)			
500	-	C, Sp. 4-5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca. 18	350	6,5	1100	12,6-12,7
	x =	3,75					100	min. 19,0	480	12,6-12,8
ca. 50	11,6 =	1140-1150					350	6,9-7,1	400	12,9-13,5
⑤	4,0 =	1170-1200					575	1,0		
	1355 =	0,3 - 1,7					450-510 =	2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
1100	125,5-121,5 (117,5-123,5)	1140-1150*	500	112,5-115,5 (110,5-117,5)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 EIC 3,9e

1. Edition

En

PES 4 A 80 D 420 RS 1277 Z RSV 300-1000 A 1 B 643 DR

supersedes

company:

engine:

Eicher

EDK 4-8

48 kW(65PS)

1 - 2 - 4 - 3
0 - 90 - 180 - 270

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,10-2,30)
2,15-2,25

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
980	9,3-9,4	5,2 - 5,3	0,2(0,35)			
300	7,4-7,6	1,1 - 1,5	0,2(0,3)			
800/500	- - -	C, Sp.4-5	0,3(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca.27	300	5,5	980	9,3-9,4
	x =	5,25					300	5,9-6,1	810	9,6-9,8
							100	min.19	500	9,9-10,0
ca.55	1020-1030	= 8,3					370-430	=2,0		
⑤	1040-1070	= 4,0								
	1210=	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		3a Fuel delivery characteristics		Starting fuel delivery Idle		5a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm³/1000 strokes		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
980	52,5-53,5 (51,0-55,0)	1020-1030*	800	51,5-54,5 (50,0-56,0)	100	16,5-17,1 mm RW	300	6,0	
			500	49,5-51,5 (48,0-53,0)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.80

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 EIC 3,9d
1. Edition

En

PES 4 A 80 D 420 RS 1277 RSV 300-1000 A 1 B 670 DR

supersedes

company.

engine

Eicher

FDK 4-9

40,5 kW(55PS)

1 - 2 - 4 - 3
0 - 90 - 180 - 270

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15-2,25

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
980	8,3-8,4	4,4 - 4,5	0,2(0,35)			
300	7,4-7,6	1,1 - 1,5	0,2(0,3)			
800/500	- - -	C, Sp.4-5	0,3(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
100%	800	0,3-1,0	-	-	-	ca. 30	300	5,5	980	8,3-8,4
	x =	6,0					300	5,9-6,1	800	8,6-8,8
							100	min. 19,0	500	9,0-9,1
ca. 58	1020-1030	= 7,3					380-440	= 2,0		
⑤	1040-1070	= 4,0								
	1210	= 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...						Control rod travel	
rev/min	cm ³ /1000 strokes	rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3		4	5	6	7	8	9
980	45,0-46,0 (43,5-47,5)	1020-1030*		800	42,0-45,0 (40,5-46,5)	100	16,5-17,1 mm RW	300	6,0
				500	42,0-44,0 (40,5-45,5)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.80

Test Specifications Fuel Injection Pumps and Governors

PES 4 A 90 D 410 RS 2570 RSV 350-1300 A 2 B 1126 DL

supersedes

4.80

company:

Daimler-Benz

engine:

OM 314

55 kW(75PS)

1 - 3 - 4 - 2
0 - 90-180-270

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,20-2,40) mm (from BDC)
2,25-2,35

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1300	9,9-10,0	5,2 - 5,4	0,3(0,45)			
350	8,1-8,3	1,2 - 1,8	0,2(0,4)			
600	- - -	C, Sp. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque contr	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 20	350	7,7	1300	9,9-10,0
	x =	4,0					350	8,1-8,3	1050	10,3-10,6
ca. 51	1340-1350	=8,9					550-610	=2,0	600	11,2-11,4
⑤	1420-1450	=4,0					450		450	11,6-11,7
	1600	=0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	3	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	9
1	2		4	5	6	7	8		
1300	52,5-54,5 (50,5-56,5)	1340-1350*	600	50,0-52,0 (48,0-54,0)	100	79,25-89,25	350	8,2	

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

PES 6 A 80 D 320 RS - 1280 RSV 300-1150 AOB 2001 DR

1 - 5 - 3 - 6 - 2 - 4 je 60°

supersedes

company

engine

Eicher
EDK 6-4
77 kW (105PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,10-2,30)

2,15-2,25

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1130	8,9-9,0	5,1 - 5,2	0,2(0,35)			
300	6,1-6,3	0,7 - 1,3	0,2(0,3)			
900/500	- - -	C, Sp. 4-5	0,3(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11 +0,1
loose	800	0,3-1,0	-	-	-	ca. 26	300	5,7	1130	8,9
	x = 5						100	min. 19,0	785	9,2
ca. 50	1170-	1180= 7,9					300	6,1-6,3	500	9,5
⑤	1205-	1235= 4,0					485-	545= 2,0		
	1385=	0,3-1,7					650	max. 1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1130	51,5-52,5 (50,0-54,0)	1170-1180*		900	48,5-51,5 (47,0-53,0)	100	16,3-16,9	300	6,2
				500	46,5-48,5 (45,0-50,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.80

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7w3

En

1. Edition

PES 6 A 90 D 410 R RS 2569 RSV 350-1275 A0 B 1138 L

supersedes

company:

engine:

-
Daimler-Benz
OM 352
62 kW(84PS)

1 - 5 - 3 - 6 - 2 - 4
0 -60 -120-180-240-300

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,20-2,40) mm (from BDC) RW 10,5
2,25-2,35

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1250	8,4-8,5	3,7-3,8	0,3(0,25)			
350	8,5-8,7	1,1-1,5	0,2(0,4)			
750	- - -	C, Sp. 4-5	0,4(0,3)			
600			0,4(0,3)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 33	350	7,5	1250	8,4-8,5
	x =	8,0					100	min. 19,0	785	9,1-9,3
ca. 71	1290-1300	= 7,4					350	7,9-8,1	500	9,8-9,9
⑤	1325-1355	= 4,0					715-	775=2,0		
	1545	= 0,3-1,7					850	0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm³/1000 strokes			rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1250	37,5-38,5 (36,5-39,5)	1290-1300*		750	36,5-38,5 (35,5-39,5)	100	74,25-84,25	350	8,0
				600	34,0-36,0 (33,0-37,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/1 MB 3,8 k 1

2. Edition

En

PES 4 A 90 D 410 RS 2294 EP/RSV 750-1400 A0 B2022 DL

supersedes

company.

engine

10.77

Daimler-Benz

OM 314

(85 PS)

1 - 3 - 4 - 2
0 - 90 - 180 - 270

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{matrix} 2,15-2,25 \\ (2,10-2,30) \end{matrix}$ mm (from BDC) RW = 10,5 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1345	10,5	7,1 - 7,3	0,3(0,45)			
	(+0,1)					
750	5,9-6,1	1,6 - 2,2	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque contr. ..	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0				ca. 30	750	6,0		± 0,1
	x =	3,7					100	min. 19		
							750	5,9-6,1	600	12,3
ca. 51	1385-	1390 = 9,5					765-	795 = 2,0	450	10,6
⑤	1435-	1440 = 3,6					820	0 - 1		
	1500 =	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1345	71,5-72,5 (69,5-74,5)	1385-1390*				100	84,25-91,25	750	6,0

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.80

Test Specifications Fuel Injection Pumps and Governors

En

WPP 001/4
2. Edition

PE 6 A 95 D 412 RS2305 EP/RSV 250-1225 A1 B562 DL

 supersedes 8.72
 company F B W
 engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke (1,85-2,05)
 1,90-2,00 mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1200	12,2-12,3	9,4 - 9,6	0,3(0,6)			
250	8,0-8,2	0,9 - 1,5	0,3(0,5)			
600	---	C, 4 - 5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque c	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm ±0,1
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 26	250	5,5		
	x	= 5,2					100	min. 19		
ca. 67	1265-	1275=11,2					250	5,9-6,1	1225	12,2
⑤	1290-	1320= 5,0					420-	480= 2,0	800	12,7
	1400	0,3-1,0					600	0 - 1	600	12,7

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	3		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2			4	5	6	7	8	9
LDA 1200	0,7 bar 92,5-89,5 (90,5-96,5)	1265-1275*		LDA 600	0,7 bar 88,0-91,0 (86,0-93,0)	100	mm RW 14,7 - 15,3		
				LDA 600	0 bar 67,0-70,0 (65,0-72,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.80

Testoil-ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Ppe 2305

-2-

Pump/governor	Setting	Measurement	Control rod travel- diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
2305 with 562 DL	0,68	0,22 0	12,5 - 12,6 12,3 - 12,4 11,2 - 11,4

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7q 3

En

3. Edition

PES 6 A 90 D 410 RS 2293 EP/RSV 350-1300A0B1105DL (1)
RS 2293 Z 350-1300A0B1101DL (2)

supersedes 7.78
company Daimler-Benz
engine OM 352
(92kW) 125 PS (1)
(70kW) 95 PS (2)

1 - 5 - 3 - 6 - 2 - 4 je 60°

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,10-2,30)
2,15-2,25 mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1300	9,5-9,6	6,2 - 6,3	0,3(0,45)	8,2-8,3	4,0 - 4,1	
350	6,3-6,5	0,4 - 0,9	0,2(0,4)	6,9-7,1	0,7 - 1,1	
800/500		C, Sp. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Ppe 2293 with RSV.1105 DL (1)

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 22	350	5,9	300	9,5-9,6
	x =	5,5					100	min. 19,0	800	10,2-10,4
ca. 56	1340-1350	8,5					350	6,3-6,5	500	10,3-10,4
⑤	1365-1395	4,0					700	max. 1,0		
	1550	0,3-1,7					490-550	2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
1300	62,5-63,5 (60,5-65,5)	1340-1350*	800	60,0-62,0 (58,0-64,0)	100	13,7-14,3 mm RW	350	6,4	
			500	54,0-56,0 (52,0-58,0)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.80

The numbers denote the sequence of the tests

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control			
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm		
1	2	3	4	5	6	7	8	9	10	11		
loose	800	0,3-1,0				ca. 20	350	6,5	300	8,2-8,3		
							100	min. 19,0	800	9,0-9,2		
ca. 66	1340-1350 = 7,2								350	6,9-7,1	500	9,4-9,5
	1370-1400 = 4,0								680	max. 1,0		
②a	1500 = 0,3-1,7						520-580=2,0					

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery ⑤ Idle		④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1300	40,5 - 41,5 (38,5 - 43,5)	1340-1350*		800	42,0-45,0 (40,0-47,0)	100	13,7-14,3 mm RW	350	7,0
				500	36,5-38,5 (34,5-40,5)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
②a										

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery ⑤ Idle		④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 3,8 f1

5. Edition

En

PES 4 A 80 D 410 RS 2094 Z
RS 2519

RSV350-1275A2B1004D (1)
RSV675-1400A8B550 (2)

supersedes 1.79
company Daimler-Benz
engine OM 314
(1) (72PS)
(2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15 - 2,25
(2,10 - 2,30) mm (from BDC)

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1275	9,0-9,1	5,4 - 5,5	0,2(0,35)			
350 900/500	7,4-7,6 - - -	C, Sp. 4-5	0,3(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque cor	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0				ca.22	350	7,0	1275	9,0-9,1
	x =	4,4					100	min.19	900	9,3-9,5
							350	7,4-7,6	500	9,6-9,8
ca.52	1315-	1325=8,0					1000	max.1,0		
⑤	1355-	1385=4,0					790-	850= 2,0		
	1700=	0,3- 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat. Note: changed to ... rev/min 3	③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)			rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
rev/min 1	cm ³ /1000 strokes 2		4	5	6	7	8	9
1275	54,5-55,5 (53,0-57,0)	1315-1325*	900	51,0-53,0 (49,5-54,5)	100	72,5-82,5	350	7,5
			500	47,5-49,5 (46,0-51,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

2.80

675-1400 A 8 B 550 (2)

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca.64	1400	16,0	without auxiliary spring			ca.30	675	6,0	1380	0
	1450	9,7								
	1490	4,0					250	19 - 21	650	0
	1470	5,0-8,2	with auxiliary spring				675	5,7-6,3	500	0,7 - 1,3
1520	1,8-3,5	750					3,5-4,6			
1600	0,3-1	920					0 - 1			
②a										

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limit.		③a Fuel delivery characteristics		Starting fuel delivery ⑤ Idle		④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
ca.8	mm RW	1440-1450*				100	72,5-82,5	675	6,0

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control		
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	10	11	
②a											

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limit.		③a Fuel delivery characteristics		Starting fuel delivery ⑤ Idle		④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

②

Test Specifications Fuel Injection Pumps ② and Governors

40

VDT-WPP 001/4 MAN 9,2 c

1. Edition

En

Testoil-ISO 4113

PES 5 A 95 D 320 LS 2168, Z RQ 250/1150 AB917D

supersedes

company: M A N

engine D 2555 MXUL

1 - 3 - 5 - 4 - 2 je 72°

(192 PS - 1)

(168 PS - 2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,3 + 0,1 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	7,5 - 8,0	0,4			
	6	3,2 - 4,2				
200	6	0,5 - 1,4				

just the fuel delivery from each outlet according to the values in

3. Governor Settings

RQ ..917 D (1)

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5 rev/min 6		Idle speed regulation Setting point rev/min 7 Control rod travel mm 8		Test specifications rev/min 9 Control rod travel mm 10		Torque control rev/min 11 Control rod travel mm 12	
600	15,7-16,3	600	16,0	1170	15,0-15,4	540	0	150	6,6-8,1	880	15,8-16,0
				1200	10,0-14,4			250	4,5-6,7	1020	15,4-15,6
				1250	0 - 9			350	1,5-4,0	1100	15,3-15,4
				1320	0			440	0		

Torque-control travel on flyweight assembly dimension a = 0,2 mm

Speed regulation: At 1190 - 1205 = 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1 cm ³ /1000 strokes 2		Control rod stop rev/min 3	Fuel delivery characteristics rev/min 4 cm ³ /1000 strokes 5	Starting fuel delivery Idle speed rev/min 6 cm ³ /1000 strokes/mm 7
20°	- 2468 -			
1150	117,5 - 119,5		800 500	117,5 - 120,5 max. 119,5
40°				
1150	114,5 - 116,5 (increase by ± 1.0 cm ³)		800 500	115,0 - 118,0 max. 116,5
				100 250
				11,9 - 12,9 7 mm RW
				./.

Checking values in brackets

BOSCH

Geschäftsbereich KH, Kundendienst, Kfz-Ausrüstung.
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D1

B. Governor Settings

2468 Z with 917D (2)

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12
600	15,7-16,3	600	16,0	1170 1200 1250 1320	15,0-15,4 10,0-14,4 0 - 9 0	540	0	150 250 350 440	6,6-8,1 4,5-6,7 1,5-4,0 0	880 1020 1100	15,8-16,0 15,4-15,6 15,3-15,4

Torque-control travel
on flyweight assembly dimension a =

0,2

mm

Speed regulation At

1190 - 1205

1 mm less control
rod travel**C. Settings for Fuel Injection Pump with Fitted Governor**

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /-1000 strokes	rev/min		rev/min	cm ³ /-1000 strokes	rev/min	cm ³ /1000 strokes / mm
1	2	3		4	5	6	7
20° 1150	2468Z - 104,5 - 106,5			800 500	104,5 - 107,5 max. 103,5	100 250	11,9 - 12,9 7 mm RW
40° 1150	101,5 - 103,5			800 500	102,0 - 105,0 max. 100,5		

Checking values in brackets

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation At

1 mm less control
rod travel**C. Settings for Fuel Injection Pump with Fitted Governor**

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /-1000 strokes	rev/min		rev/min	cm ³ /-1000 strokes	rev/min	cm ³ /1000 strokes / mm
1	2	3		4	5	6	7

Checking values in brackets

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 DAF 6,2 i
5. Edition

En

PE 6 A 90 D 320 RS 2547 RQ 250/1200 AB 1022 R

supersedes 6.80
company DAF
engine DT 615
113 kW (153 PS)

See Service Information VDT-I-DAF 004

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing difference between
control-rod travel 9 mm and 21
= 2,5 - 3,5° camshaft.

Port closing at prestroke $\begin{matrix} 2,20-2,30 \\ (2,15-2,35) \end{matrix}$ mm (from BDC)/ RW 9

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1000	10,8+0,1	7,0 - 7,2	0,3(0,45)			
250	5,8-6,0	0,8 - 1,2	0,2(0,4)			
600	- - -	C, 4 - 5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12
650	19,6-20,4	650	20,0	9,8	1245-1265	250	8,5	100	min. 10	-	-
1200	Breakway	VH	ca. 49°	4,0	1340-1370			250	8,4-8,6		
1500	0 - 1							405-465	=2,0		
								550	0 - 1		

Torque-control travel on flyweight assembly dimension a = mm Speed regulation: At 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes/mm
1	2	3	4	5	6	7	
LDA 1000	0,7 bar 70,5 - 71,5 (68,5 - 73,5)			LDA 600	0 bar 50,0-52,0 (48,0-54,0)	- 250	- 7,0

Checking values in brackets

B Governor Settings

DAF 6,2 i

-2-

②

Checking of slider PRG check ①		Full-load speed regulation ④				Idle speed regulation ⑤				Torque control ③	
rev/min	Control rod travel mm	Setting point rev/min	Control rod travel mm	Control rod travel mm	Test specifications rev/min	Setting point rev/min	Control rod travel mm	Control rod travel mm	Test specifications rev/min	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12

Torque-control travel
on flyweight assembly dimension a

mm

Speed regulation At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp 40°C (104 F) ②		Control rod stop ③a	Fuel delivery characteristics ③b		Starting fuel delivery Idle speed ⑥	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes / mm Control rod travel
1	2	3	4	5	6	7

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 1000 rev/min decreasing
increasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure bar	Gauge pressure bar	mm (1)
.. RS 2547 with RQ..AB 1022 K	0,68	0,27	10,8 - 10,9
		0,16	10,6 - 10,7
		0	9,9 - 10,1
			9,8 - 10,0

Notes:

(1) when n =

rev/min and
gauge pressure

bar (= maximum full-load control rod travel)

En

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 HAN 10,8 d

3. Edition

En

PE 6 A 95 D 320 RS 2364 EP/RSV 350-1100 A8 B1041DR (1)
A8 B1069DR (2)
PE 4 A 95 D 420 RS2365, Z, Y A8 B1041DR (3-5)

supersedes 12.78
company MF-Hanomag
engine

6 Cyl.: normal $\pm 0,50^\circ$
4 Cyl.: 1 - 2 - 4 - 3 ($\pm 0,75^\circ$)

D 962 (1)
D 963 (2)
D 943 (3)
(4) = Z
(5) = Y

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{matrix} 2,15-2,25 \\ (2,10-2,30) \end{matrix}$ mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery 6 Zyl. cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery 4 Zyl. cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
(1) 1100	10,0	9,0 - 9,3	0,3(0,6)	10,0	9,4 - 9,7	(3)
(2) 1100	+0,1 10,7	10,5 - 10,7	0,3(0,6)	+0,1 9,9	8,6 - 9,1	(4-5)
350	6,7-6,9	1,4 - 2,2	0,3(0,7)	6,7-6,9	1,4 - 2,2	
700/500	- - - -	C, 4-5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

6 Cyl. + 1041 DR

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 25	350	5,5	1100	10,1
	x =	4,5					100	min. 19	975	10,3
							350	5,9-6,1	500	10,6
ca. 56	9,0	1140-1150					495-555	= 2,0		
⑤	4,0	1170-1200					650	0 - 1		
	1370	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
(1) 1100	89,0-91,0 (87,0-93,0)	1140-1150*	700	93,0-96,0 (91,0-98,0)	100	19 - 21 mm RW			
			500	83,5-86,5 (81,5-88,5)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
100se	800	0,3 - 1,0				ca.25	350	5,5	1100	10,7
	x = 5,5						100	min. 19	975	11,0
							350	5,9-6,1		
ca.56	9,7	1140-1150					450-550	= 2,0	500	11,4
	4,0	1180-1210					650	0 - 1		
②a	1375	0,3 - 1,7								

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		3 Rotational-speed limitat.		3a Fuel delivery characteristics		Starting fuel delivery 5 Idle		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
(2) 1100	103,5-105,5 (101,5-107,5)	1140-1150*	700		99,5-103,5 (97,5-105,5)	100	19-21mmRW		
			500		103,5-105,5 (101,5-107,5)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

4 Cy1.+1041DR (3-5)

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
100se	800	0,3-1,0				ca.25	350	5,5	1100	10,0
	x = 4,5						100	min. 19	1010	10,4
							350	5,9-6,1		
ca.55	8,9	1140-1150					490-550	= 2,0	500	10,9
②a	4,0	1175-1205					650	0 - 1		
	136	0,3 - 1,7								

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limitat.		3a Fuel delivery characteristics		Starting fuel delivery 5 Idle		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
1100	93,0-95,0	1140-1150*	700	100,0-103,0	100	19-21mmRW			
(3)			500	92,0- 94,0					
1100	87,5-89,5	1140-1150*	700	91,5- 94,5					
(4)			500	83,0- 85,0					
1100	84,0-86,0	1140-1150*	700	88,5- 91,5					
			500	78,5- 80,5					
(increase by ± 2,0 cm³)									

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 DAF 6,2 i 1

1. Edition

En

supersedes

company

engine

-
DAF

DT 615

PE 6 A 90 D 320 RS 2547 RSV 250-1200 A5P 779 R

See Service Information VDT-I-DAF 004.

Port closing difference between control-rod travel 9 and 21 = 2,5-3,5° camshaft.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,2-2,3}{(2,15-2,35)}$ mm (from BDC) / RW 9

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1000	10,8±0,1	7,1 - 7,2	0,3(0,45)			
250	5,9-6,1	0,8 - 1,2	0,2(0,4)			
600	9,8-10,0	C, Sp.4 u. 5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca. 22	250	5,5	1000	10,8-10,9
	x =	3.25					100	min. 19,0	400	10,8-11,0
							250	5,9-6,1	300	11,0-11,5
⑤ ca. 54	9,8	1240-1250					330	390=2,0		
	4,0	1275-1305					520	max. 1,0		
	1450	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
LDA 1000	0,7 bar 71,0-72,0 (69,0-74,0)	1240-1250*	LDA 600	0 bar 50,0 - 52,0 (48,0 - 54,0)	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 1000 rev/min decreasing pressure - in bar gauge pressure
increasing

DAF 6,2 i 1 -2-

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel diminution difference mm (1)
..RS 2547 with RSV .. A5B 779 R	0,7 bar	0,25 0,21 0	10,8 - 10,9 10,6 - 10,7 10,1 - 10,4 9,8 - 10,0

Notes

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 DAF 6,2i2

1. Edition

En

PE 6 A 90 D 320 RS 2547 RSV 250-1200 A5B 2133 R

See Service Information VDT-I-DAF 004.

supersedes -

company: DAF

engine: DT 615

Port closing difference between control-rod travel 9 and max. 2,5 - 3,5° camshaft

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{2,2,2,3}
(2,15,2,35) mm (from BDC) / RW 9 mm

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1000	10,8+0,1	7,05 - 7,15	0,3(0,45)			
250	5,9-6,1	0,8 - 1,2	0,2(0,4)			
600	9,8-10,0	C, Sp.4 u. 5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3 - 1,0	-	-	-	ca. 17	250	5,5	1000	10,8-10,9
	x	3,25					100	min. 19	500	10,8-10,9
							250	5,9-6,1	250	11,1-11,3
⑤ 50,5	9,8	1240-1250					585-645	= 2,0		
	4,0	1270-1300					725	max. 1,0		
	1490	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limit.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...							
rev/min	cm ³ /1000 strokes	rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
LDA 1000	0,7 bar 70,5-71,5 (68,5-73,5)	1240-1250*		LDA 600	0 bar 50,0-52,0 (48,0-54,0)	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.81

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 1000 rev/min decreasing pressure - in bar gauge pressure
increasing

DAF 6,2 i 2

-2-

Testoil-ISO 4113

Pump/governor	Setting	Measurement	Control rod travel- diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
.. RS 2547 with RSV .. A5B 2133 R	0,7	0,25 0,21 0	10,8 - 10,9 10,6 - 10,7 10,1 - 10,4 9,8 - 10,0

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 FOR 5,9 c

1. Edition

En

PES 6 A 90 D 210 RS 2465

RSV 250-1200 A0B 2067 L (1)

RSV 250-1200 A0B 2083 L (2)

supersedes -

company: Ford GB

engine: Dover (1)

My 81 (2)

113 kW (153 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke $2,50-2,60$
($2,45-2,65$) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	10,9+0,1	7,85 - 7,95	0,3(0,45)			
300	7,9-8,1	0,9 - 1,3 See C	0,2(0,4)			
400	10,0+0,1	4 and 5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

...2067 L, ... 2083 L

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0				ca. 10	300	7,5		
	x =						300	7,9-8,1		
ca. 56	1240-	1250 = 9,9					600-	660 = 2,0		
⑤	1330-	1360 = 4,0								
	1450=	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limit		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
LDA 1200	0,66 bar 78,5-79,5 (76,5-81,5)		LDA 400	0 bar 44,5-46,5 (42,5-48,5)	100	19,0-21,0			

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

1200

rev/min decreasing
increasing pressure - in bar gauge pressure

FOR 5,9 c

-2-

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel- diminution difference mm (1)
.. 2465 with .. 2067 L and .. 2083 L	0,66	0,47 0,34 0,0	10,9 - 11,0 10,6 - 10,8 10,1 - 10,2 10,0 - 10,1

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4

1. Edition

En

PE6A95D412RS2305

RQ250/1225AB750DL

supersedes

company:

FBW

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{1,90-2,00}{(1,85-2,05)}$ mm (from BDC) Cyl. 1

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	11,7-11,8	10,3-10,5	0,3(0,6)			
250	7,8-8,0	1,8 -2,4	0,3(0,5)			
600/600	- - -	C, Sp.4-5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

Checking of slider PRG check ①		Full-load speed regulation ④				Idle speed regulation ⑤				Torque control ③	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Control rod travel mm 5	Test specifications rev/min 6	Setting point rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
550	15,6-16,4	550	16,0	10,7	1245-1260	250	7,9	100	mind.19,0	1200	11,7-11,8
1200	Breakaway			4,0	1295-1325			250	7,8-8,0	1050	11,7-12,0
								500	max.1,0	900	12,0-12,2
								410-450	= 2,0	550	12,2-12,3

Torque-control travel
on flyweight assembly dimension a =

0,25

mm

Speed regulation: At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) ②		Control rod stop ③a	Fuel delivery characteristics ③b		Starting fuel delivery Idle speed ⑥	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
LDA	0,7 bar		LDA	0,7 bar		
1200	101,5-103,5 (99,5-105,5)		600	92,0-95,0 (90,0-97,0)	100	134,0-144,0
			LDA	0 bar		
			600	66,5-70,0 (65,0-72,0)		

Checking values in brackets

2.80

D19

D43

BOSCH

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D. Adjustment Test for Manifold Pressure Compensator

-2-

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
2305 with 750 DL	0,7 bar	0,4 0,15 0	12,2 - 12,3 11,8 - 11,9 10,6 - 10,8 10,2 - 10,3

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 DAF 6,2 i

4. Edition

En

PE6A90D320RS2547

RQ 250/1200AB1022R

EP/RSV 250-1200 A5 B 779R

supersedes 2.80

company DAF

engine DT 615

113 kW(153PS)

See Service Information VDT-I-DAF 004.

(2024R)

Port closing difference between control-rod travel 9 and max. 2,5 - 3,5° camshaft

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{matrix} 2,20-2,30 \\ (2,15-2,35) \end{matrix}$ RW9 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	10,8-10,9	7,0 - 7,2	0,3(0,45)			
250	5,8-6,0	0,8 - 1,2	0,2(0,4)			
600	- - -	C, 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

RQ.. 1022R

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Test specifications Control rod travel mm 5	rev/min 6	Setting point rev/min 7	Control rod travel mm 8	Test specifications Control rod travel mm 9	rev/min 10	rev/min 11	Control rod travel mm 12
650	19,6-20,4	650	20,0	9,8	1245-1265	250	8,5	100	min. 10	-	-
1200	Breakaway	VH ca. 49°		4,0	1340-1370			250	8,4-8,6		
1500	0 - 1							405-550	465=2,0 0 - 1		

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop	Fuel delivery characteristics		Starting fuel delivery Idle speed	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
LDA 1000	0,7 bar 70,5-71,5 (68,5-73,5)		LDA 600	0 bar 50,0-52,0 (48,0-54,0)	- 250	- 7,0

Checking values in brackets

Testoil-ISO 4113

BOSCH

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6.80

The numbers denote the sequence of the tests

EP/RSV...779 R

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 22	250	5,5	1000	10,8-10,9
	X = 4,15						100	min. 19	500	10,8-10,9
ca. 54	9,8	1240-1250					250	5,9-6,1	250	11,1-11,3
2a	4,0	1285-1315					380-410	= 2,0		
	1450	0,3 - 1,7					520	0 - 1		

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		5 Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm³/1000 strokes	rev/min	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
LDA 1000	0,7 bar 70,5-71,5 (68,5-73,5)	1240-1250*	LDA 600	0 bar 50,0-52,0 (48,0-54,0)					

ecking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 1000 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
2547 with 1022R (1)	0,68	0,27 0,16 0	10,8-10,9 10,6-10,7 9,9-10,1 9,8-10,0 (1)
2547 with 779R (2)	0,68	0,26 0,21 0	10,8-10,9 10,6-10,7 10,1-10,4 9,8-10,0

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (- maximum full-load control rod travel)

En

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7v7

1. Edition

En

PES6A90D410RS2596

RSV 350-1400 AOB 1141 L

supersedes

company:

Daimler Benz

engine:

OM 352 A

124 kW(169PS)

1 - 5 - 3 - 6 - 2 - 4
0 - 60 - 120 - 180 - 240 - 300

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,95-2,15) mm (from BDC) RW 10,5
2,00-2,10

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	12,4	7,85-7,95	0,3(0,45)			
350	+0,1 8,6-8,8	1,5 - 2,1	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			⑤ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0				ca. 27	350	4,0		
	x =	5,75					350	10,2-10,4		
ca. 71	1440-1450 =	11,4					710-770 =	2,0		
⑤	1535-1565 =	4,0								
	1680 =	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min	3	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
rev/min 1	cm ³ /1000 strokes 2			4	5	6	7	8	9
LDA 1400	0,7 bar 78,5-79,5 (76,5-81,5)	1440-1450*		LDA 600	0,7 bar 68,0-70,0 (66,0-72,0)	100	79,25-89,25		
				LDA 500	0 bar 50,5-53,5 (48,5-55,5)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.81

D. Adjustment Test for Manifold Pressure Compensator

-2-

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure increasing

MB 5,7 v 7

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel - diminution difference mm (1)
2596 with 1141 L	0,7	0,325 0,15 0	12,4 - 12,5 12,2 - 12,3 11,6 - 11,8 11,4 - 11,5

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 MB 5,7 x

1. Edition

En

PES 6 A 90 D 410 RS 2293

RQV 300-1400 AB 1140 L
RQV 300-1400 AB 1141 L
RQV 300-1400 AB 1142 L

supersedes

company Daimler Benz

engine OM 352 A

124,0 kW (169 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,15-2,25$
($2,10-2,30$) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1375	10,8-0,1	7,4 - 7,5	0,3(0,45)			
300	6,8-7,0	0,9 - 1,5	0,2(0,4)			
500	10,4+0,1	5,4 - 5,6	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

.. AB 1140 L, -- AB 1141 L, .. AB 1142 L

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1140 1650	15,2-17,8 0 - 1,0				ca. 12	300 100 300	6,9 min. 8,4 6,8-7,0	300 475 1450	1,3-4 2,4-2,7 8,6
ca. 66	9,8 4,0	1435-1445 1530-1560				350-475 ③a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ④a	Fuel delivery characteristics ⑤a high idle speed ⑤b		Starting fuel delivery Idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1375	0,7 bar 74,0-75,0 (72,0-77,0)	1435-1445*	LDA 500	0 bar 54,0 - 56,0 (52,0 - 58,0)	100	13,7-14,3	n=700	

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.81

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E1

D. Adjustment Test for Manifold Pressure Compensator

-2-

Test at n = 1375 rev/min decreasing pressure - in bar gauge pressure increasing

MB 5,7 x

Pump/governor	Setting	Measurement	Control rod travel diminution difference mm (1)
2293 with 1140 L 1141 L 1142 L	0,7 bar	0,2 0	10,8 - 10,9 10,6 - 10,7 10,4 - 10,5

Notes

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 STE 6,0 h 3
1. Edition

40

En

PE6A85D412RS2303

RQV250-1400AB 1091L

supersedes

company: STEYR
engine: WD 612-60

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,50-2,80$
($2,45-2,65$) mm (from BDC) $0,7 \dots 6$

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	11,3-11,4	7,6-7,7	0,3(0,45)			
250	8,4-8,6	0,9-1,5	0,2(0,4)			
800/500	-	C, 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1400 1700	15,2-17,8 0 - 1,0				ca. 11	100 250	min. 7,6 5,9-6,1	250 490	0,8 2,5-2,7
ca. 45	10,3 4,0	1440-1450 1540-1570					350-410 = 2,0 500 max. 1,0		1450	8,3

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9 ± 0,1
LDA	0,7 bar		LDA	0,7 bar	100-	170(80-190)	1400	11,3
1400	76,5-77,5 (74,5-79,5)	1440-1450*	800	70,0-73,0 (68,0-75,0)			950	11,4
			500	0 bar 55,5-58,5 (53,5-60,5)			850	11,7
							500	11,9

Checking values in brackets

* 1 mm less control rod travel than col. 2

2.80

E5

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D. Adjustment Test for Manifold Pressure Compensator

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

STE 6,0h 3 -2-

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
2303 with 1091 L	0,7		12,0 - 12,1
		0,175	11,7 - 11,8
		0,155	11,5 - 11,7
		0	11,3 - 11,4

Notes:

(1) when n = . rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Full-load adjustment is carried out on the governor, adjust the manifold-pressure compensator (LDA) adjustment screw 0.3...0.5 mm in the direction "more" control-rod travel.

Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/MB 5,7 V

4. Edition

40

En

PES 6 A 90 D 410 RS 2596 RQV 300-1400 AB 1066DL

1 - 5 - 3 - 6 - 2 - 4 - je 60°

supersedes 8.80
company: Daimler-Benz
engine: OM 352 A
(124 kW 168PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,00-2,10 mm (from BDC) Cyl. 6
(1,95-2,15)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	12,4 ^{+0,1}	7,7-7,8	0,3(0,45)			
300	8,9-9,1	0,9-1,5	0,2(0,4)			
500/500	-	C.4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1400 1750	15,2-17,8 0 - 1	-	-	-	ca. 23	100 300 550-610 = 2,0	min. 10,5 8,9- 9,1 = 2,0	300 670 1450	1,1 3,9-4,1 8,0
ca. 63	11,4 4,0	1440-1450 1570-1600				590-660 ③a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ④a	Fuel delivery characteristics ⑤a		Starting fuel delivery idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9 + 0,2
LDA 1400	0,7 bar 77,0-78,0 (75,0-80,0)	1440-1450*	LDA 500	0,7 bar 70,5-72,5 (68,5-74,5)	100	15,9-16,3RW 72,25-82,25	1400 1200	12,6 12,8
			LDA 500	0 bar 56,0-58,0 (54,0-60,0)	100-220(80-240)		1000 500	13,3 13,9

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

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10.80

E7

D. Adjustment Test for Manifold Pressure Compensator

-2-

Test at n = rev/min decreasing pressure - in bar gauge pressure increasing

MB 5,7 v

Pump/governor	Setting	Measurement	Control rod travel: diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
2596 with 1066 DL	0,7	0,35 0,20 0	13,9 - 14,0 13,2 - 13,3 12,5 - 12,7 12,5 - 12,6

Notes:

(1) when n = rev/min and gauge pressure = bar (- maximum full-load control rod travel)

Set the stop screw to control-rod travel 3 - 3,5 mm.

Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 MB 5,7 v 8

1. Edition

En

PES 6 A 90 D 410 RS 2596 RQV 300-1400 AB 1151 L

supersedes

company: -

engine: Daimler Benz
OM 352 A
124 kW (169 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,00-2,10}{(1,95-2,15)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	11,5+0,1	7,7-7,8	0,3(0,45)			
300	7,9-8,1	0,9-1,5	0,2(0,4)			
600	11,5+0,1	See	0,4(0,55)			
450	10,4+0,1	C, 4 und 5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel ①	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1400 1700	15,2-17,8 0 - 1,0	-	-	-	ca. 15	300 100	8,0 min. 9,5	300 480	1,2-1,3 2,4-2,7
ca. 61	10,5 4,0	1140-1450 1560-1590				350- 500 3a			1450	8,4-8,5

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ④a	Fuel delivery characteristics ⑤a high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1400	0,7 bar 77,0-78,0 (75,0-80,0)		LDA 600	0,7 bar 61,0-63,9 (59,0-65,0)	100	72,25-82,25		
			LDA 450	0 bar 42,0-44,0 (40,0-46,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.81

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E9

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

MB 5,7 v 8

-2-

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel diminution difference mm (1)
..2596 with .. 1151 L	0,7	0,29 0,175 0,0	11,5 - 11,6 11,1 - 11,2 10,6 - 10,8 10,4 - 10,5

Testoil-ISO 4113

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 5,7 v

5. Edition

En

PES 6 A 90 D 410 RS 2596 RQV 300-1400 AB 1066 DL

supersedes 10.80
company: Daimler-Benz
engine: OM 352 A
124 kW (168PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,0 - 2,1$
(1,95-2,15) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	12,4+0,1	7,7-7,8	0,3(0,45)			
300	8,9-9,1	0,9-1,5	0,2(0,4)			
500	13,6+0,1		0,4(0,55)			
500	12,3+0,1	C, 4 - 5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1400 1750	15,2-17,8 0 - 1,0	-	-	-	ca. 19	100 300	min. 10,5 8,9-9,1		
ca. 63	11,4 4,0	1440-1450 1580-1610				590-660 (3a)				

Torque control travel a = mm

* Set the stop screw to control-rod travel 3 - 3,5 mm.

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed limitation intermediate speed (2b) (4a)	Fuel delivery characteristics high idle speed (5a) (5b)		Starting fuel delivery idle switching point (6)		Torque-control travel (5) Control rod travel mm	
rev/min	cm³/1000 strokes	rev/min	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	
1	2	3	4	5	6	7	8	9
LDA 1400	0,7 bar 77,0-78,0 (75,0-80,0)	1440-1450*	LDA 500	0,7 bar 70,5-72,5 (68,5-74,5)	100	72,25-82,25 / RW = 15,8-16,2mm		
			LDA 500	0 bar 56,0-58,0 (54,0-60,0)	*			

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

rev/min decreasing pressure - in bar gauge pressure
increasing

MB 5,7 v

-2-

Pump/governor	Setting	Measurement	Control rod travel	diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)	
"RS 2596 with "AB 1066 DC	0,7	0,35	13,6 - 13,7	
		0,2	13,2 - 13,3	
		0	12,5 - 12,7	
			12,3 - 12,4	

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 SCL 4,3 b

1. Edition

En

PES4A85C410RS2279

RSV250-1000A1BV10735D

supersedes

company

Schlüter

engine

SDM100W4

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,4 - 2,5

Port closing at prestroke

mm (from BDC)

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5,1 - 5,5	0,4			
	6	1,3 - 2,1				
	15	12,1 - 13,2				
200	6	0,1 - 0,9				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	Control rod travel
1	2	mm	4	5	mm	7	8	mm	10	mm
ca.50	1000	12,0	without auxiliary spring			ca.20	250	5,5	980	10,2
	1020	9,4					850	10,5		
	1050	5,0					750	10,9		
	1020	8,5-10,2	with auxiliary spring				350	5,2-5,7	600	11,1
	1050	4,3 -6,4					540	2,9-4,2	0 - 1	
⑤	1150	0,3- 1,0								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational- speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min						Control rod travel mm	
rev/min 1	cm ³ /1000 strokes 2	3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	9
700	52,5-54,5 (51,5-55,5)	1020*				100	ca. 20mmRW	250	5,5

Checking values in brackets

* 1 mm less control rod travel than col. 2

2.80

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MAN 15,0e

2. Edition

En

PE 10A 95D 520/5LS 2604 RQ 250/1150AB 1130R

Komb.-Nr. 0 400 649 220

10 - 9 - 4 - 1 - 8 - 7 - 6 - 3 - 5 - 2

0 - 45- 72-117-144-189-216-261-288-333 ° $\pm 0,5^\circ$ ($\pm 0,75^\circ$)

supersedes 4.80

company: MAN

engine: D2840MF

268 kW (364 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,65 - 1,85) mm (from BDC) Cyl. 10; RW=9,0 - 12,0 mm
1,70 - 1,80

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	13,0-13,1	12,5 - 12,7	0,3(0,6)			
250	7,9-8,1	0,9 - 1,5	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 10		Torque control rev/min 11	
Control rod travel mm 2		Control rod travel mm 4		rev/min 6		Control rod travel mm 8		rev/min 9		Control rod travel mm 12	
550	15,6-16,4	550	16,0	12,0	1195-1210	250	7,0	100	min.8,5	1150	13,0-13,1
1350	0 - 1			4,5	1265-1295			250	6,9-7,1	1000	13,0-13,3
								410-470	=2,0	905	13,3 - 13,5
								480	max.1,0	600	13,4-13,5

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes/mm 7	
1150	124,5 - 126,5 (122,5 - 128,5)			650	113,5 - 117,5 (111,5 - 119,5) max. 118,5 (max. 120,5)	100	5,9-16,5 mm RW
				500			

Checking values in brackets

9.83

E18

E18

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Test Specifications Fuel Injection Pumps ① and Governors

Testoil-ISO 4113

PES 6 A 95 D 410 LS 2541

ROV 250-1100 AB 850 DL (1)

supersedes 3.80

RO 250/1100 AB 965 DL (2)

company: MAN

RO 250/1100 AB 1106 L (3)

engine D 2566 M, MF, MUH, MUL

(1-Nr.7947)

(2-Nr.7952)

177 kW (240)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $\frac{1,50-1,60}{(1,45-1,65)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery (2) cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery (1+3) cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,0+0,1	12,9 - 13,1	0,3(0,6)	12,0+0,1	12,6 - 12,8	n = 1100
250	5,9-6,1	0,8 - 1,4	0,3(0,5)	5,9-6,1	0,8 - 1,4	n = 250
750/500	---	C, col. 4-5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

ROV-850 DL (1)

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1100 1350	15,2-17,8 0 - 1	-	-	-	ca. 12	100 250 450	min 7,5 5,9-6,1 max. 1,0	200 600 1140	0,5-1,2 3,8-4,1 8,3
ca. 42	11,0 4,0	1140-1150 1185-1215				3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		Rotational speed limitation intermediate speed 4a	Fuel delivery characteristics high idle speed 5b		Starting fuel delivery idle switching point 6		Torque-control travel 5	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1100	124,5-126,5 (122,5-128,5)	1140-1150*	750	110,5-113,5 (108,5-115,5)	100	124,0-134,0 6 mm RW	1100	12,0
			500	max. 113,5	250		500	12,1
					100	170 (80-190)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.80

B. Governor Settings

R0- 965 DL (2)

MAN 11,1 p 3

- 2 -
(2)

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12
600	15,6-16,4	600	16,0	11,0	1145-1160	250	6,1	100	min.7,5	-	-
				4,0	1185-1215			250	6,0-6,2		
								360	420 =2,0		
1300	0 - 1							500	0 - 1		

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /- 1000 strokes	rev/min		rev/min	cm ³ /- 1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7
1100	127,5 - 129,5 (125,5 - 131,5)			500	max. 113,5	100	14,0-14,6
						250	6,0

Checking values in brackets

B. Governor Settings

R0 - 1106 L (3)

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12
600	15,6-16,4	600	16,0	11,0	1145-1160	250	6,0	100	min.7,5		
				4,0	1255-1285			250	5,9-6,1		
								450	max.1,0		
1140	breakaway							370	400 =2,0		
1350	0 - 1,0										

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /- 1000 strokes	rev/min		rev/min	cm ³ /- 1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7
1100	124,5 - 126,5 (122,5 - 128,5)			750	110,5 - 113,5 (108,5 - 115,5)	100	124,0 - 134,0
				500	max. 113,5	250	6,0

En Checking values in brackets

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 MAN 11,1 p 2

4. Edition

En

Testoil-ISO 4113

PES 6 A 95 D 410 LS 2541 RQ 250/1100 AB 1049 DL (1)
 LS 2541 250/1050 AB 1042 DL (2)
 LS 2541 Z 250/1050 AB 1042 DL (3)

supersedes 80

company MAN

engine D2566 MUH

(1) 16 kW (220 PS)
-7951(2) 141,0 kW (192 PS)
-7949(3) 129,0 kW (175 PS)
-7948

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,50-1,60
(1,45-1,55)

mm (from BDC) cyl. 6

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	11,2-11,3	11,4 - 11,6	0,3(0,6)	9,8-9,9	9,5 - 9,7	n = 1050 (2)
250	5,9-6,1	0,8 - 1,4	0,3(0,5)	9,2-9,3	8,7 - 8,9	n = 1050 (3)
700/500	-	C, 4 - 5	0,4(0,7)	5,9-6,1	0,8 - 1,4	

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

(1)

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Test specifications Control rod travel mm 5	rev/min 6	Setting point rev/min 7	Control rod travel mm 8	Test specifications rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600	15,6-16,4	600	16	10,2	1145-1160	250	6,0	100	min. 7,5	1100	11,2-11,3
1100	11,0-11,4			4,0	1185-1215			250	5,9-6,1	845	11,2-11,5
								360	400=2,0	750	11,4-11,6
1250	0 - 1									600	11,6-11,7

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	Control rod travel cm ³ /1000 strokes/mm 7
1100	112,5 - 114,5 (110,5 - 116,5)			700	102,5 - 105,5 (100,5 - 107,5) max. 106,5 (108,5)	100	124,0 - 134,0
				500		250	6,0

Checking values in brackets

B. Governor Settings

(2)

MAN 11,1 p 2

- 2 -

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12 +0,1
600	15,6-16,4	600	16,0	3,8	1095-1110	250	6,0	100	min. 7,5	1050	9,8
1050	9,8-10,0			4,0	1165-1195			250	5,9-6,1	815	10,4
1250	0 - 1							360-400	= 2,0		
								450	0 - 1	600	10,7

Torque-control travel on flyweight assembly dimension a = 0,4 mm Speed regulation At 1095-1110 min⁻¹ 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /1000 strokes	rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes/mm
1	2	3		4	5	6	7
(2) 1050	93,5 - 95,5 (91,5 - 97,5)	-		700	90,5 - 92,5 (88,5 - 94,5)	100	124,0 - 134,0
				500	max. 91,5 (93,5)	250	6,0 mm RW

Checking values in brackets

B. Governor Settings

(3)

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12
600	15,6-16,4	600	16,0	8,2	1095-1110	250	6,0	100	min. 7,5	1050	9,2
1050	9,0-9,4			4,0	1160-1190			250	5,9-6,1	815	9,9
1250	0 - 1							360-400	= 2,0		
								450	0 - 1	600	10,1

Torque-control travel on flyweight assembly dimension a = 0,4 mm Speed regulation At 1095-1110 min⁻¹ 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /1000 strokes	rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes/mm
1	2	3		4	5	6	7
(3) 1050	85,5 - 87,5 (83,5 - 89,5)	-		700	81,5 - 83,5 (79,5 - 85,5)	100	124,0 - 134,0
				500	max. 80,5 (82,5)	250	6,0 mm RW

Checking values in brackets

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 5,7 u 2

1. Edition

En

PES 6 A 90 D 410 RS 2568 RQV 300-1400 AB1066-1DL (1)

RSV 350-1400 AO B2075L (2)

supersedes

company: Daimler-Benz

engine: OM 352 A

(1 - 127 kW - 173PS)

(2 - 123 kW - 167PS)

** Set idle-speed auxiliary spring at 2,0 mm control-rod travel.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,05-2,15
(2,00-2,20)

mm (from BDC)

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	12,9-13,0	7,7-7,8	0,3(0,45)	13,0-13,1	7,5-7,7	n = 350
300	8,9-9,1	1,1-1,7	0,2(0,4)	5,4-5,6	0,7-1,3	
800/500	- - -	C, 4 - 5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

1066-1DL (1)

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1400 1800	15,2-17,8 0 - 1	-	-	-	ca. 16	100 300 740-800	min. 10,5 8,9-9,1 = 2,0	300 730 1470	1,4-1,6 3,8-4,2 8,4
ca. 62	12,0 4,0	1440-1450 1590-1620				3a	400-470			

Torque control travel a =

mm

Col. 10-11

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed		Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
LDA 1400	0,7 bar 77,0-78,0 (75,0-80,0)	1440-1450*	LDA 800	0,7 bar 80,5-82,5 (78,5-84,5)	100	72,25-82,25			
			LDA 500	0 bar 49,5-51,5 (47,5-53,5)		100-220(80-240)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.79

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Guiding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
loose	800 X	0,3-1,0 = 2,75				ca. 19	350	5,5**	1380	13,0-13,1
ca. 52	12,0 4,0 1640	1420-1430 1475-1505 0,3 - 1,7					100 350 370-430 500	min. 19 5,4-5,6 =2,0 0,1	1050 13,2-13,4 500 13,6-13,7	
						(3a)				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational speed limitation intermediate speed		Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
1380	75,5-76,5 (73,5-78,6)	1420-1430*	900	77,5-80,0 (75,5-82,0)	100	89,25-99,25			

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n = rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel-diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm
2568 with 1066DL	.0,66	0,45 0,15 0	14,0 - 14,1 13,4 - 13,5 11,9 - 12,1 11,6 - 11,7

En

Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 MB 5,7 s

6. Edition

En

PES 6 A 90 D 410 RS 2293 RQV 300-1425 AB946L
..947L, 948L, 949L

S2293Z with 946L s.a. MB5,7s3

supersedes 12.77
company: Daimler-Benz
engine: 124 kW (168PS)
OM 352 A

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,10-2,30) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1375	10,8	7,4-7,5	0,3(0,45)			
300	+ 0,1 6,8-7,0	0,9-1,5	0,2(0,4)			
500	-----	C, 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

..946 L

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 66	1425 1800	16,0-19,4 0-1	-	-	-	ca. 10	100 300 570-630 750	min. 7,3 5,7-5,9 = 2,0 0,1	400 1450	1,4-2,2 8,2
ca. 61	9,8 4,0 1700	1435-1445 1535-1565 0 - 1				3a			-	-

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed limitation intermediate speed (2b) (4a)	Fuel delivery characteristics high idle speed (5b)	Starting fuel delivery idle switching point (6)	Torque-control travel Control rod travel mm (5)			
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1375	0,7 bar 74,0-75,0 (72,0-77,0)	1435-1445*	LDA 500	0 bar 54,0-56,0 (52,0-58,0)	100 <			

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.80

F3

BOSCH

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Importeur in der Republik Frankreich: Robert Bosch GmbH

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1425 1800	16,0-19,0 0 - 1	-	-	-	ca. 12	100 300 570-630 750	min. 7,3 5,7-5,9 = 2,0 0 - 1	300 800 1420	0,6-1,2 4,0-4,5 8,2
ca. 66	9,8 4,0 1650	1435-1445 1530-1560 0 - 1				300-500 (3a)			-	-

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
LDA 1375	0,7 bar 74,0-75,0 (72,0-77,0)	1435-1445 947: 700 948: 700/ 0,4bar 949: 1300	LDA 500	0 bar 54,0-56,0 (52,0-58,0)	100	13,7-14,3		
					100-220 (80-240)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 1375 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	Control rod travel-diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm
2293 with 946L 947L 949L	0,7	0,22 0	10,8 - 10,9 10,6 - 10,7 10,4 - 10,5
2293 with 948	0,7	0,2 0	10,8 - 10,9 10,6 - 10,7 10,4 - 10,5

En

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 5,7 u 2

4. Edition

En

PES 6 A 90 D 410 RS 2568 RQV 300-1400 AB 1066-1 DL (1)
RSV 350-1400 AO B2075 L (2)

supersedes 4.80

company: Daimler-Benz

OM 352 A

engine:

(1) 127 kW (173 PS)

(2) 123 kW (167 PS)

** Set idle-speed auxiliary spring at 2,0 mm control-rod travel.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,05-2,15}{(2,00-2,20)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	12,9-13,0	7,7-7,8	0,3(0,45)	13,0-13,1	7,5 - 7,7	n = 1380
300	8,9-9,1	1,1-1,7	0,2(0,4)	8,9-9,1	0,7 - 1,3	n = 350
800/500	- - -	C, 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

1066-1DL

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel ①	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1400 1800	15,2-17,8 0 - 1	-	-	-	ca. 16	100 300 740-800 = 2,0	min. 10,5 8,9- 9,1 1450	300 490 1450	1,3 2,5-2,7 8,6
ca. 62	12,0 4,0	1440-1450 1590-1620				400-470 3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ④a	Fuel delivery characteristics ⑤a		Starting fuel delivery idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1400	0,7 bar 77,0-78,0 (75,0-80,0)	1440-1450*	LDA 800	0,7 bar 81,5-83,5 (79,5-85,5)	100	72,25-82,25	1400 1450 1075	12,9-13,0 13,1-13,4 13,7-13,9
			LDA 500	0 bar 49,5-51,5 (47,5-53,5)	100-220(80-240)		500	14,0-14,1

Checking values in brackets

* 1 mm less control rod travel than col. 2

The numbers denote the sequence of the tests

3. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 19	350	8,5	1380	13,0-13,1
	x	= 2,75					350	8,9-9,1	1050	13,4-13,6
ca. 52	12,0	1420-1430					430-490	= 2,0	500	13,6-13,7
	4,0	1480-1500								
2a	1640	0,4 -1,7								

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limitat.		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)				Idle			
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1380	75,5-76,5 (73,5-78,5)	1420-1430*			77,5-80,0 (75,5-82,0)	100	89,25-99,25 17-17,4 mm RW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n = rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel- diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
2568 with 1066-1D	0,7	0,45 0,15 0	14,0 - 14,1 13,4 - 13,5 12,1 - 12,3 11,6 - 11,7

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

En

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 11,1p3

40

3. Edition

En

PES 6 A 95 D 410 LS 2541

RQV 250-1100 AB 850 DL (1)

RQ 250/1100 AB 965 DL (2)

RQ 250/1100 AB1106 L (3)

supersedes 3.80

company: MAN

 engine: D2566 M, MF, MUH, MUL
 (1-Nr. 7947)
 (2-Nr. 7952)
 177 kW (240)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke 1,50-1,60
 (1,45-1,65) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,0 ^{+0,1}	12,9-13,1	0,3(0,6)	12,0+0,1	12,6-12,8	n = 1100
250	5,9-6,1	0,8- 1,4	0,3)0,5)	5,9-6,1	0,8 -1,4	n = 250
750/500	- - -	C, Sp.4-5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

RQV 850 DL (1)

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca.68	1100 1350	15,2-17,8 0 - 1	-	-	-	ca.12	100 250 450	min.7,5 5,9-6,1 max.1,0	200 600 1140	0,5-1,2 3,8-4,1 8,3
ca.42	11,0 4,0	1140-1150 1185-1215				③a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ④a	Fuel delivery characteristics ⑤a		Starting fuel delivery idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1100	124,5-126,5 (122,5-128,5)	1140-1150*	750	110,5-113,5 (108,5-115,5)	100 250	124,0-134,0 6 mm RW	1100 500	12,0 12,1
			500	max.113,5	100-170	(80-190)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

F7

f7

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B. Governor Settings

RQ965DL (2)

MAN 11,1 p 3

-2-

Checking of slider PRG check ①		Full-load speed regulation Setting point ④				Idle speed regulation Setting point ⑤				Torque control ③	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	mm 12
600	15,6-16,4	600	16,0	11,0	1145-1160	250	6,1	100	min.7,5	-	-
				4,0	1185-1215			250	6,0-6,2		
								360-500	420=2,0 0 - 1		
1300	0 - 1										

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp 40°C (104°F) ②		Control rod stop ③a		Fuel delivery characteristics ③b		Starting fuel delivery Idle speed ⑥	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes / mm Control rod travel 7
1100	127,5-129,5 (125,5-131,5)			500	max. 113,5	100 250	14,0 - 14,6 6,0

Checking values in brackets

B. Governor Settings

RQ 1105 L (3)

Checking of slider PRG check ①		Full-load speed regulation Setting point ④				Idle speed regulation Setting point ⑤				Torque control ③	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600	15,6-16,4	600	16,0	11,0	1145-1160	250	6,0	100	min.7,5		
				4,0	1255-1285			250	5,9-6,1		
1140	breakaway							450	max.1,0		
1350	0 - 1,0							370	400=2,0		

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp 40°C (104°F) ②		Control rod stop ③a		Fuel delivery characteristics ③b		Starting fuel delivery Idle speed ⑥	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes / mm Control rod travel 7
1100	124,5-126,5 (122,5-128,5)			750	110,5-113,5 (108,5-115,5)	100 250	124,0-134,0 6,0

En Checking values in brackets

Test Specifications Fuel Injection Pumps ① and Governors

WPP 00/1 MB 5,7 u

3. Edition

En

PES 6 A 90 D 410 RS 2569 RQV 300-1400 AB 1065 DL (1)

RQV 300-1400 AB 1077 DL (2)

supersedes

4.80

company.

Daimler-Benz

engine.

OM 352

(96 kW - 130 PS)

1 - 5 - 3 - 6 - 2 - 4 je 60°

Set stop at 3 - 3,5 mm control rod travel.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,25-2,35
(2,20-2,40)

mm (from BDC)

RW 10,5

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	10,1	5,9 - 6,0	0,3(0,45)			
300	+0,1 8,4-8,6	1,0 - 1,6	0,2(0,4)			
500	- -	C. 4 - 5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

AB 1065 DL (1)

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1400	15,2-17,8				ca. 21	100	min. 8,5	300	1,1
	1630	0 - 1,0					300	8,4-8,6	670	3,9-4,1
ca. 65	9,1	1440-1450					550-610	=2,0	1450	8,0
	4,0	1530-1560				③a				

Torque control travel a = 1,2 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9 +0,1
1400	59,5-60,5 (59,5-64,5)	1440-1450*	500	51,5-54,5 (49,5-56,5)	100	14,4-15,0 mm RW 72,25-82,25	1400 1000 630 500	10,1 10,6 11,1 11,3
					100-200 (80-240)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.80

B. Governor Settings

MB 5,7 u
AB 1077 DL

-2-

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1400 1700	15,2-17,8 0 - 1	-	-	-	ca. 12	100 300 540-600 700	min. 7,1 5,5-5,7 = 2,0 0 - 1	300 800 1400	1,1-1,4 4,3-4,6 8,1
ca. 60	9,7 4,0	1440-1450 1550-1580				(3a)				

Torque control travel a = 0,35 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1440	61,5-62,5 (59,5-64,5)	1440-1450*	1000	59,5-61,5 (57,5-63,5)	100	12,2-12,8	1400 920 755 500	10,6 10,8 10,9 10,9
		705-720** (ZDA)	500	53,0-56,0 (51,0-58,0)				

Cr ng values in brackets

* 1 mm less control rod travel than col. 2

stoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
						(3a)				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

En

F10

140

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7 v 5

2. Edition

En

PES 6 A 90 D 410 RS 2596 RSV 350-1250 A0B 1142 L

1 - 5 - 3 - 6 - 2 - 4 je $60^\circ \pm 0,5^\circ (\pm 0,75^\circ)$

supersedes 10.80
company Daimler-Benz
engine OM 352 A
110 kW(150PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke (1,95-2,15)
2,00-2,10 mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1250	12,3	7,6 - 7,7	0,3(0,45)			
	+0,1					
350	9,2-9,4	2,0 - 2,7	0,2(0,4)			
750	13,4+0,1	C,Sp. 4-5	0,4(0,55)			
500	11,6+0,1	C.Sp. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca.24	350	6,7	1250	12,3
	x	= 3,25					350	9,2-9,4	500	13,4
ca.58	1290-1300	= 11,3					550-610	= 2,0	980	12,9
⑤	1345-1375	= 4,0								
	1525	= 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
LDA 1250	0,7 bar 76,0-77,0 (74,0-79,0)	1290-1300*	LDA 750	0,7 bar 79,0-82,0 (77,0-84,0)	100	69,25-79,25 1 mm RW			
			LDA	0 bar 51,5-53,5 (49,5-55,5)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.81

D. Adjustment Test for Manifold Pressure Compensator

Test at n = rev/min decreasing pressure - in bar gauge pressure increasing

MB 5,7 v 5

-2-

Testoil-ISO 4113

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel diminution difference mm (1)
2596 with 1142 L	0,7 bar	0,36 0,19 0	13,4 - 13,5 13,1 - 13,2 12,4 - 12,6 12,1 - 12,2

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Testing the hydraulic start-locking device

Locking at 0,8 ± 0,05 bar

Unlocking at 0,3 ± 0,05 bar

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 EIC 3,9 b

2. Edition

En

PES 4 A 80 D 420 RS 1277 EP/RSV 300-1050 A1 B2052 DR

1 - 2 - 4 - 3 je 90° ± 0,50

(± 0,75)

supersedes 10.78
company Eicher
engine EDK 1 T

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15-2,25
(2,10-2,30)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1030	11,0	6,7 - 6,8	0,2(0,35)			
	+0,1					
300	7,9-8,1	1,7 - 2,3	0,2(0,3)			
750/500	- - -	C, 4-5	0,3(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	10	11 ± 0,1
loose	800	0,3-1,0				ca. 24	300	7,5	1030	11,0
	x	4,5					100	min. 19	850	12,7
							300	7,9-8,1		
ca. 55	10,0	1070-1080					515-575	= 2,0	500	12,8
⑤	4,0	1095-1125					650	0 - 1		
	1300	0,3- 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.	③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)								
rev/min	cm ³ /1000 strokes	Note: changed to ... rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
LDA 1030	0,8 bar 67,5-68,5 (66,0-70,0)	1070-1080*	LDA 750	0,8 bar 84,5-87,5 (83,0-89,0)	100	99,5-109,5	300	8,0
			LDA 500	0 bar 55,5-57,5 (54,0-59,0)				./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

2.79

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Testoil-ISO 4113

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel: diminution difference mm (1)
1277 with 2052D	0,80	0,50 0,23 0	12,7 - 12,8 12,1 - 12,2 11,3 - 11,5 10,7 - 10,8

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7 q 3

En

2. Edition

PES 6 A 90 D 410 RS2293 EP/RSV 350-1300 A0B1105 DL (1)
RS2293Z 350-1300 A0B1101 DL (2)

supersedes 9.76
company: Daimler-Benz
engine: OM 352 (A)
(125 PS -1)
(95 PS -2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,15-2,25}{(2,10-2,30)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	9,5	6,2 - 6,4	0,3(0,45)	8,2	4,0 - 4,2	
350	(+0,1) 6,4	0,4 - 0,9	0,2(0,4)	(+0,1) 7,0		
800/500	(±0,1) Section C	Sp. 4-5	0,4(0,55)	(±0,1)	0,7 - 1,1	

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm (+0,1) 11
ca.56	1300 1340- 1365-	9,5 1350 =8,5 1395 =4,0	without auxiliary spring			ca.22	350	6,4	1300	9,5
⑤	1345 1400 1550	ca.8,5 3,5-4,9 0,3-1,7					200 350 490- 700	mind.19 5,3-6,5 550=2,0 0 - 1	800 500	10,3 10,3

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational- speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
1300	62,5-63,5 (60,5-65,5)	1340-1350*	800	60,0-62,0 (58,0-64,0)	100	13,7-14,3 mm RW			
			500	54,0-56,0 (52,0-58,0)					./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.78

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Testoil-ISO 4113

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
62-66	1300	8,2 - 8,3	without auxiliary spring			20	350	7,0	1300	8,2
	1340-	1350= 7,2					200	min. 19	800	9,1
	1390-	1420= 4,0					350	6,9-7,1		
	1345	ca. 7,2	520-580	= 2,0	500		9,4			
	1400	3,4 - 3,5	680	0 - 1						
②a	1500	0,3 - 1,7	with auxiliary spring							

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limitat.		3a Fuel delivery characteristics		Starting fuel delivery Idle		5 Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1300	40,5-41,5 (38,5-43,5)	1340-1350*		800	42,0-45,0 (40,0-47,0)	100	13,7-14,3 mm RW		
				500	36,5-38,5 (34,5-40,5)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Control-lever deflection in degrees		Lower rated speed		3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	10	11	
2a											

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limitat.		3a Fuel delivery characteristics		Starting fuel delivery Idle		5 Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

VDT-WPP 001/4 MB 8,7 i

En

2. Edition

PEI 6 A 90 D 410 RS 2124 EP/RSV 350-1250 A1 B750D (1)
700-1150 A1 B665 (2)

supersedes 3.75
company: Daimler-Benz
engine: OM 360
(192 PS - 1)
(170 PS - 2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,15 + 0,1

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	6,4 - 6,9	0,4			
200	6 15 9	2,8 - 3,8 13,8 - 15,3 3,7 - 4,9				

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

EP/RSV .. 750D (1)

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
ca. 64	1250 1280 1320	16,0 12,0 5,4	without auxiliary spring			ca. 23	350	6,1		
⑤ ca. 63	1230	ca. 10,1					200	19 - 21		
	1300	ca. 9,0					350	5,8-6,4		
	1430	0,3-1,0					450	2,6-4,2		
							600	0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1230	85,5 - 87,5	1270-1280*		800	83,5-86,5	100	ca. 11,9		
				1320-	1335: 3,5 mm RW				

Checking values in brackets

* 1 mm less control rod travel than col. 2

3.76

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B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca.55	1150 1180 1220	16,0 10,2 2,0	without auxiliary spring			ca.33	700	4,5		
ca.54	1160 1190 1250	ca.10,0 ca. 3,5 0,3-1,0					200 700 740 800	19 - 21 4,2-4,8 2,0-3,1 0 - 1		
②a			with auxiliary spring							

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤	④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)								
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm	
1	2	3		4	5	6	7	8	9	
1130	79,0-81,0	1165-1175*		1185	1195 = 3,5 mm RW	100	ca.11,9			

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
②a										

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤	④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)								
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm	
1	2	3		4	5	6	7	8	9	

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7 q 3

4. Edition

En

PES 6 A 410RS 2293 RSV 350-1300A0B1105DL(1)
RS 2293Z 350-1300A0B1101DL(2)

supersedes 4.80
company Daimler-Benz
engine OM 352
92 kW(125PS)(1)
70 kW(95PS)(2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,10-2,30)
2,15-2,25 mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1300	9,5-9,6	6,2-6,3	0,3(0,45)	8,2-8,3	4,0 - 4,1	
350	6,3-6,5	0,4-0,9	0,2(0,4)	6,9-7,1	0,7 - 1,1	
800	10,2+0,2	C, Sp. 4-5	0,4(0,55)			
500	10,3+0,1					

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

..2293 with ..1105DL (1)

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque cont.	
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	Control rod travel
1	2	mm	4	5	mm	7	8	mm	10	mm
loose	800	0,3-1,0	-	-	-	ca.28	50	5,9	1300	9,5-9,6
	x =	5,5					100	min.19,0	800	10,2-10,4
ca.64	8,5	1340-1350					850	5,3-6,5	500	10,3-10,4
⑤	4,0	1380-1410					700	max.1,0		
	1550	0,3 - 1,7				490-	550=	2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min						Control rod travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9	
1300	62,5-63,5 (60,5-65,5)	1340-1350*	800	60,0-62,0 (58,0-64,0) 54,0-56,0 (52,0-58,0)	100	79,25-89,25 / 13,7- 14,3 mm RW	350	6,4	

Checking values in brackets

* 1 mm less control rod travel than col. 2

The numbers denote the sequence of the tests

..2293 Z with RSV-1101 DL (2)

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca.20	350	6,5	300	8,2-8,3
	x =	3,0					100	min.19,0	800	9,0-9,2
ca.66	7,2	1340-1350					350	6,9-7,1	500	9,4-9,5
②a	4,0	1370-1400					680	max.1,0		
	1500	0,3- 1,7					520-580	= 2,0		

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery ⑤ Idle		④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1300	40,5 - 41,5 (38,5 - 43,5)	1340-1350*		800	42,0-45,0 (40,0-47,0)	100	13,7-14,3 mm RW	350	7,0
				500	36,5-38,5 (34,5-40,5)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
②a										

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery ⑤ Idle		④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

VDT-WPP 001/4 EIC 2,9 a

1. Edition

En

PES 3 A 80 D 320 RS 1288 EP/RSV 300-1075 A 1 B 722 D (1)

supersedes -

300-1075 A 1 B 753 D (2)

company

Eicher

engine

3-7 (50PS -1)

3-4 (42PS -2)

1 - 3 - 2 je 120°

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15 + 0,1 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,6 - 5,0	0,3			
	6	2,0 - 2,8				
200	6	0,1 - 0,7				

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

EP/RSV .. 722 D (1)

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
ca. 58	1075 1150 1180	16,0 8,0 1,6	without auxiliary spring			ca. 25	300		1055	0
ca. 58	1100 1130 1180	ca. 10,0 ca. 5,4 0,3-1,0					100 300 400 500	19 - 21 5,7-6,3 0 - 2,5 0 - 1,0	400	0,3-0,5
⑤			with auxiliary spring							

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1075	53,5-55,5	1110-1120*		800 500	48,0-51,0 47,0-50,0	100	109,5-119,5	300	6,0
									./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

10..75

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca. 58	1075	16,0	without auxiliary spring			ca. 25	300	6,0	1055	0
	1150	8,0					100	19 - 21	450	0,7-0,9
	1180	1,6					300	5,7-6,3		
	1100	ca. 10,0					400	0 - 2,5		
2a	1130	ca. 5,4	with auxiliary spring				500	0 - 1		
	1180	0,3- 1,0								

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limitat.		3a Fuel delivery characteristics		Starting fuel delivery 5 Idle		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
1075	42,5-44,5	1115-1125*	900	43,5-46,5	100	109,5-119,5	300	6,0	
			600	40,5-43,5					

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
2a										

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limitat.		3a Fuel delivery characteristics		Starting fuel delivery 5 Idle		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

VDT-WPP 001/4

1. Edition

En

PES 6 A 95 D 410 RS 2108

EP/RSV 200-1100 A1 B 607

200-1050 A1 B 607

supersedes -

company:

MAN-RABA

engine:

D 2156 HM 6(180PS)

HMT6(220PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,7+0,1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring tensioning (torque control valve) mm 6
1000	9	8,4 - 9,4				
	6 15	4,0 - 5,0 16,6 - 17,8				
200	9	5,9 - 6,9				

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

200 - 1100

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
⑤ ca.60	1100	16,0	without auxiliary spring			ca.24	200	6,0	1080	0
	1150	11,0					100	19 - 21		
	1180	6,4					200	5,7-6,3	250	1,2-1,8
	1140	10,4-12,8	with auxiliary spring				300	2,2-4,1		
	1180	4,0- 8,4					450	0 - 1		
	1300	0,3- 1,0								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min						Control rod travel mm	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	mm 9
1100	93,5-95,5	1130-1140*				100	mind.20		

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.75

The numbers denote the sequence of the tests

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca. 60	1050	16,0	without auxiliary spring			ca. 26	200	6,0	1030	0
	1120	9,8					100	19 - 21		
	1160	5,0								
	②a	1120	8,0-11,8	with auxiliary spring			300	2,0-3,9		
1180		2,0- 4,5	420				0 - 1			
1260		0,3- 1,0								

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤ Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1100	93,5-95,5	1080-1090*				100	mind.20		

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure CompensatorTest at n = $\frac{\text{rev/min}}{\text{decreasing pressure - in bar gauge pressure}}$
increasing

Pump/governor	Setting	Measurement	Control rod travel- diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

En

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4

FOR 5,9 a

4. Edition

En

PES 6 A 90 D 210 RS 2465 EP/RSV 250-1200 A0 B743L (1)
RS 2465Z 250-1200 (2)

supersedes 8.77
company: Ford
engine LKW-Tornado

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,5 - 2,6 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5,2 - 5,5	0,4			
200	6	1,6 - 2,6				
	9	1,9 - 2,9				

Port closing difference between control rod travel 9 and 21 4 -5

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

743L (1)

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
ca. 62	1200 1300 1370	16,0 11,8 8,0	without auxiliary spring			ca. 10	300	8,0		
⑤ ca. 56	1230 1350 1550	ca. 11,2 ca. 5,9 0,3-1,0					150 300 500 760	19 - 21 7,7-8,3 3,7-6,0 0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
LDA 1200	0,7 bar 81,0-82,0 (79,0-84,0)	1240-1250*	LDA 400	0 bar 49,0-51,0 (47,0-53,0)	- 300	- 8,0 mm RW			

Checking values in brackets

* 1 mm less control rod travel than col. 2

The numbers denote the sequence of the tests

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca. 62	1200	16,0	without auxiliary spring			ca. 10	300	8,0		
	1300	11,8					150	19-21		
	1370	8,0					300	7,7-8,3		
ca. 56	1230	ca. 11,2	with auxiliary spring				500	3,7-6,0		
	1350	ca. 5,9					760	0 - 1		
②a	1550	0,3-1,0								

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤ ④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
Z-LDA	0,7 bar			LDA	0 bar				
1200	78,5-79,5 (76,5-81,5)	1240-1250*		400	44,5-46,5 (42,5-48,5)	100	19 - 21 mm RW		
						300	8,0 mmRW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 600(1) rev/min decreasing pressure - in bar gauge pressure
 1200(2) rev/min increasing pressure

Pump/governor	Setting	Measurement	Control rod travel- diminution difference (1)
	Gauge pressure = bar	Gauge pressure = bar	mm (1) (2)
(1) 2465 with 743L	0,45-0,55	0,34	-0,1-0,2 -0,6-0,7
(2) 2465Z with 743L	0,68	0	Difference 0,9-1,0

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

En

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MAN 16,0 c 2

3. Edition

En

Testoil-ISO 4113

PE 10 A 95 D 520/5 LS 2501 RQ 250/1150 AB1035 DR

Komb.-Nr. 0 400 649 204

10 - 9 - 4 - 1 - 8 - 7 - 6 - 3 - 5 - 2

0 -45 -72 -117-144-189-216-261-288-333 $\pm 0,5^\circ$ ($\pm 0,75^\circ$)

supersedes 8.80

company MAN

engine D2530MTXE

265 kW (360PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke (1,65-1,85) mm (from BDC) Cyl. 10
 1,70-1,80

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	1,4 \pm 0,1	11,8 - 12,0	0,3(0,6)			
250	5,9-6,1	1,5 - 2,1	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Test specifications Control rod travel mm 5	rev/min 6	Setting point rev/min 7	Control rod travel mm 8	Test specifications rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600	19,2-20,8	600	20,0	10,4	1195-1210	250	6,0	100	min. 7,5	1150	11,4 \pm 0,1
VH = max. 46°				4,5	1270-1300			250	5,9-6,1	930	11,5 \pm 0,3
								335-375	=2,0	865	11,8 \pm 0,2
										600	11,9 \pm 0,1

 Torque-control travel on flyweight assembly dimension a = 0,2 mm Speed regulation: At 1195-1210 min⁻¹ 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	Control rod travel cm ³ /1000 strokes/mm 7
LDA 1150	0,5 bar 117,5 - 119,5 (115,5 - 121,5)			LDA 700	0,5 bar 119,5 - 122,5 (117,5 - 124,5)	100	170,0-180,0 (167,0-183,0)
				LDA 500	0 bar 76,5 - 79,5 (74,5 - 81,5)	250	6,0 mm RW

Checking values in brackets

G5

5.84

BOSCH

 Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung.
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D. Adjustment Test for Manifold Pressure Compensator

MAN 16,0 c 2 - 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel- diminution difference mm (1)
2501 with 1035 DL	0,50	0,26 0,18 0	11,9 - 12,0 11,6 - 11,7 10,7 - 11,0 10,1 - 10,2

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 MB 5,7 x 1

1. Edition

En

PES 6 A 90 D 410 RS 2293 RQV 300-1400 AB 1138 L

supersedes

company:

Daimler-Benz

engine

OM 352 A

124 kW(169 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1375	11,3+0,1	7,4 - 7,5	0,3(0,45)			
300	7,9-8,1	0,9 - 1,5	0,2(0,4)			
500	10,9+0,1	C, Sp-4 u. 5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1550 1650	16,0-19,4 0 - 1,0	-	-	-	ca.22	100 300	min.8,4 7,9-8,1	250 600 1000 1400	0,9-1,1 3,1-3,4 5,5-5,7 8,2
ca.61	10,3 4,0	1435-1445 1550-1580				350-475 (3a)				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
LDA 1375	0,7 bar 74,0-75,0 (72,0-77,0)	1435-1445*	LDA 500	0 bar 54,0-56,0 (52,0-58,0)	100	14,3-14,7 mm RW	700	

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.81

G7

BOSCH

Geschäftsbereich KH, Kundendienst, Kfz-Ausrüstung.
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MB 5,7 x 1

B. Governor Settings

[illegible]

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

[illegible]

Checking values in brackets

- 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 1375 rev/min ~~decreasing~~ ~~XXXXX~~ increasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm
..RS 2293 with RQV..AB 1138 L	0,7 bar	0 0,28	11,3 - 11,4 10,9 - 11,0 11,1 - 11,2

En

Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

40

VDT-WPP 001/4 STE 6,0 h

2. Edition

En

PE 6 A 85 D 412 RS 2303

RQV 250-1400 A B 873 D (1)

RQV 250-1400 A B 879 D (2)

supersedes

company:

Steyr

engine:

WD 610.60(1)

WD 610.72(2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,5 + 0,1$

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,1 - 4,5	0,4			
200	6	0,6 - 1,4				
	9	1,4 - 2,2				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 50	1400 1500 1600 1730	15,0-18,0 8,3-13,3 1,0- 8,0 0	-	-	-	ca. 13	100 200 300 480	8,7-11,0 6,6- 9,6 2,8- 5,8	1400 600	8,2 0 0,6-0,8

Torque control travel a = 0,7 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ④a	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery idle switching point ⑥	Torque-control ⑤		
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1300	0,4 bar 72,5-74,5	1440-1455*	LDA 800	0,4 bar 69,0-72,0	-	-		
			LDA 500	0 bar 58,0-61,0	Charge-over point 200-130 min⁻¹			./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

1.80

BOSCH

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G9

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 50	1400 1460 1550 1600 1730	15,0-18,0 11,0-15,2 4,7-10,7 0,8- 8,0 0	-	-	-	ca. 13	120 250 350 480	8,5-11,0 5,1- 7,9 0 - 3 0	1400	8,2
						(3a)				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
LDA 1400	0,45 bar 78,0-80,0	1440-1460*	LDA 800	0,45 bar 69,0-72,0	100	20 mm RW		
			LDA 500	0 bar 56,0-59,0	Change-over point 200-130 min ⁻¹			

Checking values in brackets

* 1 mm less control rod travel than col: 2

D. Adjustment Test for Manifold Pressure CompensatorTest oil = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel- diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm
2303 with 873 D	0,22 - 0,24	0,16 - 0,18	ca. 0,2 mm
2303 with 879 D	0,23 - 0,26	0,18 - 0,20	ca. 0,3 mm

En

Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 MB 3,8 g 1

1. Edition

En

PES 4 A 90 D 410 RS2516

RQV 300-1425 AB981L

supersedes

company: Daimler-Benz

engine: OM 314

(85 PS)

** TAS-Instruction see page 2!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15-2,25
(2,10-2,30)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1400	9,7	6,3 - 6,5	0,3(0,45)			
	(+ 0,1)					
300	7,3-7,5	0,6 - 3,2	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 66	1425 1700	16,0-19,4 0 - 1	-	-	-	ca. 10	100 300 570-630 = 800	min. 7,3 5,7-5,9 2,0 0 - 1	400 1425	1,4-2,2 8,1
ca. 61	8,7 4,0	1460-1470 1540-1570				3a 350-500			-	-

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1400	63,5-64,5 (61,5-66,5)	1460-1470*			100	10,1-10,3 mm RW**		
					300	6,25-12,25		
					100-220(80-240)			./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.7/

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G13

G13

Note:**

TAS (temp.-cont'd lim. of start-fuel dely.) is set after adjusting full-load delivery and switching point:

1. Additionally attach control-rod-travel measuring device 0 681 440 009 (EFEP 171) and make it correspond to previously fitted control-rod-travel measuring device on drive end.
2. Detach control-rod-travel measuring device on drive end.
3. Fit TAS and at $n = 100 \text{ min.}^{-1}$ set it to 10.1 - 10.3 mm control-rod travel at ambient temperature.
4. Tightening torque 3.0 mkp on threaded bushing at pump housing.

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 DAF 8,3 k

1. Edition

En

PE 6 A 95 D 410 RS 2525 Y.X RQ 225/1200 AB 1007 L

supersedes

5.79

company:

DAF

Test LDA and cold start in accordance with Service Information engine:

DN825 (Y.X)

DHR 825

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing difference between
control-rod travel 9 3 - 4

Port closing at prestroke

(1,95-2,15)
2,00-2,10 RW9

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12,6	10,8 - 11,0	0,3(0,6)			
225	+0,1 5,7-5,9	9,7 - 0,9	0,3(0,5)			
600	- - -	C, col. 4-5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5 rev/min 6		Idle speed regulation Setting point rev/min 7 Control rod travel mm 8		Test specifications rev/min 9 Control rod travel mm 10		Torque control rev/min 11 Control rod travel mm 12	
650	19,2-20,8	650	20,0	11,6	1230-1245	225	5,8	100	min.7,3		
1450	0 - 1	VH ca. 49°		4,0	1315-1345			225	5,7-5,9		
								340-380	= 2,0		
								450	0 - 1		

Torque-control travel

on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1 cm ³ /1000 strokes 2		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4 cm ³ /1000 strokes 5		Starting fuel delivery Idle speed rev/min 6 cm ³ /1000 strokes/mm 7	
LDA 1000	0,7 bar 106,5 - 108,5 (104,5 - 110,5)			LDA 600	0 bar 77,5-80,5 (75,5-82,5)		
X 1000	90,5 - 92,5	(12 mm RW)		X 600	77,0-80,0		
Y 1000	99,0 - 101,0	(12,5 mm RW)		Y 600	77,0-80,0		

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

Test at n = rev/min decreasing, increasing pressure - in bar gauge pressure

DAF 8,3 k -2-

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
2525 with 1007 L	0,7	0,27 0,23 0	12,6 - 12,7 12,2 - 12,3 11,5 - 11,8 11,2 - 11,3

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

②

Test Specifications Fuel Injection Pumps ② and Governors

40

001/4 MAN 16,0c3

2. Edition

En

Testoil-ISO 4113

PE 10 A 95 D 520/5 LS 2501 RQ 250/1250 AB 1036 DR

Komb.-Nr. 0 400 649 205

 1 - 8 - 7 - 6 - 3 - 5 - 2 - 10 - 9 - 4
 0 - 27 - 72 - 99 - 144 - 171 - 216 - 243 - 288 - 315⁰ ± 0,5° (± 0,75°)

supersedes 8.80

MAN

company: D 2530 MTXE

engine 294 kW (400 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,70-1,80 mm (from BDC) Cyl. 10

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	12,7+0,1	12,9 - 13,1	0,3 (0,6)			
250	6,4-6,6	1,0 - 1,6	0,3 (0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check rev/min 1		Control rod travel mm 2		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5		rev/min 6		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 10		rev/min 9		Torque control rev/min 11		Control rod travel mm 12	
600		19,2-20,8		600	20,0	11,7		1295-1310		250	6,5	100	min. 8,0			-		-	
VH =		max. 46°				4,5		1365-1395				250	6,4-6,6						
						1500		0 - 1,0				340-380	2,0						
												450	max. 1,0						

Torque-control travel on flyweight assembly dimension a = - mm

Speed regulation: At 1295-1310 min⁻¹

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
	cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		Control rod travel mm 7
LDA	0,5 bar			LDA	0,5 bar	100	170,0-180,0 (167,0-183,0) = 18,2-18,8 mm RW
1250	128,5 - 130,5 (126,5 - 132,5)			750	122,5 - 125,5 (120,5 - 127,5)		
				LDA	0 bar	250	6,5 mm RW
				500	76,5 - 79,5 (74,5 - 81,5)		

Checking values in brackets

5.84

G17

E17

BOSCH

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D. Adjustment Test for Manifold Pressure Compensator

MAN 16,0 c 3 - 2 -

Test at n = 1250 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel: diminution difference mm (1)
2501 with 1036 DR	0,50	0,28 0,18 0	12,7 - 12,8 12,4 - 12,5 11,2 - 11,5 10,2 - 10,3

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 MAN 15,0 c

5. Edition

En

Testoil-ISO 4113

PES 8 A 95 D 412 LS 2334, Z RO 250/1100 AB 793 DL (1)
ROV 200-1100 AB 794 L (2)
ROV 250-1100 AB 907 DL (3)

supersedes

company **MAN**

engine D 28 58

M2 (304 PS) (2)

"Z" M4 (275 PS) (1 + 3)

8 - 7 - 2 - 1 - 5 - 4 - 3 - 6 je 45.°

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

See camshaft BMP 001/67

Port closing at prestroke 1,7 - 1,8 mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1000	9	7,5 - 8,0	0,5			
200	6 6	3,3 - 4,3 0,5 - 1,4				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

(1) "Z" RO - 793 DL

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12
600	15,7-16,3	600	16,0	1120 1150 1190 1250	15,2-15,6 9,0-13,8 0 - 8,5 0	570	0	200 300 400 470	6,6-8,1 4,3-6,4 0,4-3,0 0	1000 1000	15,8-16,0 15,2-15,7

Torque-control travel on flyweight assembly dimension a = 0,15 mm

Speed regulation: 1140 - 1155

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		3a		3b		⑥	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes/mm
1	2	3	4	5	6	7	
1100	115,0 - 118,0	500	800 500	116,0 - 120,0 max. 117,5	100 250	mind. 20 6,0	
"Z" 1100	100,5 - 102,5	500	800 500	103,5 - 106,5 max. 97,5	100 250	mind. 18 6,0	

Checking values in brackets

B. Governor Settings

(2)

RQV 200-1100 AB 794 L

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1145 1380	14,8-18,3 0				ca. 12	150 250 350 500 640	6,2-8,0 3,8-5,8 1,1-3,1 0 -1,6 0	1145	8,3
ca. 66	1100 1180 1360	15,0-18,0 8,0-13,0 0				3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery Idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1100	115,5-117,5	1140-1155 *	800	114,5-117,5	100 250	min. 20 RW 7,0		

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

(3) "Z" RQV 250-1100 AB 907 DL

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 50	1140 1180 1220 1290	14,4-17,6 7,8-13,0 0 - 8,2 0				ca. 13	100 200 300 410	7,6-10,2 5,7-8,5 2,5-5,4 0	200 500 900 140	0,5-1,2 3,4-3,8 5,6-6,0 8,3
						3a				

Torque control travel a = 0 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery Idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1100	115,5 - 117,5	1140-1155 *	800	114,5 - 117,5	100 250	min. 20 RW 7,0		
Z 1100	100,5 - 102,5	1140-1150 *	800 500	103,5 - 106,5 max. 97,5	100 250	min. 18 RW 7.0		

Checking values in brackets

* 1 mm less control rod travel than col. 2

②

Test Specifications Fuel Injection Pumps ② and Governors

40

 WPP 011/4
3. Edition

En

 PES 4 A 90 D 410 RS 2518 RQ 300/1400 AB 989 DL
.. RS 2518 RQV 300-1400 AB1018 L

 supersedes 7.78
company OM Brescia
engine 8340.04

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,10 - 2,30) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	10,8	6,9 - 7,1	0,3(0,45)			
300	+ 0,1 7,9-8,1	0,8 - 1,5	0,2(0,4)			
900/500	- - -	C, 4 - 5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

RQ..989 DL

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Test specifications Control rod travel mm 5	rev/min 6	Setting point rev/min 7	Control rod travel mm 8	Test specifications rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
1000	14,8-15,6	1000	15,2	9,8	1445-1460	300	6,0	100	min.7,5	1400	+ 0,1
				4,0	1540-1570			300	5,9-6,1		10,8
1400	10,8-10,9							450	490 = 2,0	740	10,9
1700	0 - 1							600	0 - 1	600	11,1

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop	Fuel delivery characteristics		Starting fuel delivery Idle speed	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
1400	69,5 - 70,5 (67,5 - 72,5)	500	900	64,5 - 67,5 (62,5 - 69,5)	100	16,2 - 16,6
			500	59,5 - 62,5 (57,5 - 64,5)		

Checking values in brackets

11.80

Testoil-ISO 4113

B. Governor Settings

RQV..1018 L

-2-

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1410 1650	15,0-18,3 0 - 1	-	-	-	ca. 12	100 300 600-760 950	min. 7,9 6,3-6,5 = 2,0 0 - 1	300 1410	0,3-1,4 8,2
ca. 66	9,8 4,0	1440-1450 1500-1530				350-450 (3a)				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1400	69,5-70,5 (67,5-72,5)	1440-1450*			100 24 V-Electromagnet	16,2-16,6		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

En

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 EIC 2,9 a 1

2. Edition

En

PES 3 A 80 D 320 RS 1288 Z
1288

RSV 300-1000A1B 2084 R (1)
RSV 300-1000A1B 2084 R (2)

supersedes

company

engine

3.80

Eicher

EDK 3 (37kW-1)

EDK 3-8(31kW-2)

1 - 3 - 2

0 -120-240 + 0,50 (0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,10-2,30)

2,15-2,25

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
980	9,3-9,4	5,5 - 5,6	0,2(0,35)	8,5-8,6	4,3 - 4,4	n = 980
300	6,9-7,1	1,0 - 1,4	0,2(0,3)	7,4-7,6	1,1 - 1,7	

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 13	300	6,5	980	9,3-9,4
	x = 1,0						300	6,9-7,1	770	9,3-9,5
							100	min. 19,0	500	9,5-9,6
							450	max. 1,0		
ca. 40 ⑤	1020- 1025- 1190	1030= 8,3 1055= 4,0 =0,3-1,7					335-395= 2,0			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational- speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2			rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
980	55,5 - 56,5 (53,5 - 58,0)	1020-1030*				100	109,5-116,5	300	7,0

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

① Upper rated speed rev/min Degree of deflection of control lever 1	Control rod travel		Intermediate rated speed			④ Control-lever deflection in degrees 7	Lower rated speed		③ Torque control	
	mm 2	mm rev/min 3	4	5	6		rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 17	300	7,0	1000	8,5-8,6
	X	2,25					300	7,4-7,6	820	8,8-9,0
							100	min. 19,0	500	9,2-9,3
ca. 44		1020-1030 = 7,5					475	max. 1,0		
②a		1030-1060 = 4,0					355-415 = 2,0			
		1200 = 0,3-1,7								

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop Test oil temp. 40°C (104°F)		⑥ Rotational-speed limitat. Note: changed to ... rev/min 3	③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
rev/min 1	cm³/1000 strokes 2		rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
980	43,5-44,5 (42,0-46,0)	1020-1030*	700	42,0-45,0 (40,5-46,5)	100	109,5-116,5	300	7,0
			500	41,0-44,0 (39,5-45,5)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

B. Governor Settings

① Upper rated speed rev/min Degree of deflection of control lever 1	Control rod travel		Intermediate rated speed			④ Control-lever deflection in degrees 7	Lower rated speed		③ Torque control	
	mm 2	mm rev/min 3	4	5	6		rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
②a										

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop Test oil temp. 40°C (104°F)		⑥ Rotational-speed limitat. Note: changed to ... rev/min 3	③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
rev/min 1	cm³/1000 strokes 2		rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 HAN 10,8 f

En

4. Edition

PE 6 A 100 D 320 RS3030

EP/ESV 350-1100 A8 B 1119DR (1)

supersedes -

PE 4 A 95 D 420 RS2556

.. B 1120DR (2)

company

MF-Hanomag

.. RS2556

.. B 1121DR (3)

engine

(1-D963 A2)

6-Cyl.: normal $\pm 0,50^\circ$

(2-3 -D943)

4-Cyl.: 1 - 2 - 4 - 3 je $90^\circ (\pm 0,75^\circ)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $1,80-1,90$
($1,75-1,95$) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	11,5	15,4 - 15,6	0,3(0,6)	10,0	9,4 - 9,6	n = 400
350	+0,1 7,3-7,5	1,5 - 2,1	0,3(0,5)	+0,1 7,9-8,1		
700/500		C, 4-5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

1119DR (1)

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 24	350	5,5		
	x	5,50					100	min.19		
ca. 56	10,5	1140-1150					350	5,9-6,1		
	4,0	1180-1210					435-495	2,0		
⑤	138	0,3 - 1,7				650	0 - 1			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min						Control rod travel mm	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	rev/min 9	
(1) 1100	154,0-156,0 (152,0-158,0)	1140-1150*			100	19-21mmRW			./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.81

1120DR

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca.21	400	7,5	1100	10,0+0,1
	x	4,50					100	min.19	1005	10,4+0,2
							400	7,9-8,1	500	10,9+0,1
							580-640	= 2,0		
ca.52	9,0	= 1140-1150					600	0 - 1		
②a	4,0	= 1165-1195								
	1345	0,3 - 1,7								

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤ ④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
(2)									
1100	93,0 - 95,0 (91,0 - 97,0)	1140-1150*		700	100,0-103,0 (98,0-105,0)	100	19 - 21mm RW	400	8,0
				500	92,0- 94,0 (90,0- 96,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

** Test cold-start device according to VDT-I-DAF 004, page 2.

B. Governor Settings

1121 DR (3)

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control.	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca.22	350	6,8		± 0,1
	x	= 4,5					100	min.19	1100	9,9
							350	7,2-7,4		
ca.52	8,9	1140-1150					525-585	= 2,0	1010	10,4
②a	4,0	1165-1195					700	0 - 1	500	10,9
	1370	0,3 - 1,7								

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤ ④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
(3)									
1100	87,5-89,5 (85,5-91,5)	1140-1150*		700	91,5-94,5 (89,5-96,5)	100	19-21mm RW		
				500	83,0-85,0 (81,0-87,0)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

En

H2

H2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 HOR 2,0b

2. Edition

En

PES 3 A 80 D 410/3 RS1313 EP/RSV 400-1250 A0 B 1123 L (1)

supersedes

4.79

PES 2 A 80 D 410/3 RS1329

.. B 1123 L (2)

company

Holder

1 - 2 - 3 + 0,50 1 - 4

engine

VD 310-8(3 Cyl.)

0 - 120-240° (\pm 0,75) 0 - 90°

VD 6001/2(2 Cyl.)

Port closing difference between control-rod travel 9 and max. 9,0-9,5°

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke

1,70-1,80

(1,65-1,85)

mm (from BDC)

RW 9

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery (1) cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery (2) cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	9,4-9,5	5,6 - 5,7	0,2(0,35)	9,7-9,8	5,9 - 6,0	n = 1230
400	6,4-6,6	0,9 - 1,5	0,2(0,3)	6,4-6,6	0,9 - 1,5	

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

(3 Cyl. - 1313)

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca.22	400	6,0	-	-
ca.49	x =	4,0					100	min.19		
	8,4	1290-1300					400	6,4-6,6		
	4,0	1315-1345					500-650	560=2,0		
⑤	1500	0,3- 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1250	56,5-57,5 (55,0-59,0)	1290-1300*							

Checking values in brackets

* 1 mm less control rod travel than col. 2

3.80

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3 - 1,0				ca.29	400	6,0		
	x	= 4,0					100	min.19		
ca.5	9,0	1270-1280					400	6,4-6,6		
	4,0	1320-1350					530-590	= 2,0		
②a	1500	0,3-1,7					650	0 - 1		

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤ Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1230	59,5-60,5 (58,0-62,0)	1270-1280*							

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
②a										

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤ Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

PE 6 A 95 D 320 RS 2364 EP/RSV 350-1100 A8 B1070R
RS 2557 A8 B1127R

supersedes

4.79

company

MF-Hanomag

engine

D 963 A1

** Test cold-start device according to VDT-I-DAF 004, page 2.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15-2,25
(2,10-2,30)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery 2364 cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery 2557 cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	13,5	13,5-13,8	0,3(0,6)	13,5	13,1-13,3	n 1100
	+0,1			+ 0,1		
350	6,7-6,9	1,4 - 2,0	0,3(0,5)			
500	- - -	C, 4-5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0				ca. 24	350	5,5	480	
	x =	5,5					100	min. 19	13,5-13,6	
							350	5,9-6,1	400	
ca. 57	12,5	1140-1150					435-495	= 2,0	13,8-14,2	
⑤	4,0	1205-1235					600	0 - 1		
	1380	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
1100	134,0-136,0 (132,0-138,0)	1140-1150*	500	131,0-134,0 (129,0-136,0)	100	20-20,5 mm RW**			

Checking values in brackets

* 1 mm less control rod travel than col. 2

The numbers denote the sequence of the tests

2557 with 1127 R

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 24	350	5,5	1100	13,5
	x	= 5,5					100	min. 19,0	480	13,5-13,7
							350	5,9-6,1		
ca. 57	12,5	= 1140-1150					435-495	= 2,0	400	13,8-14,2
	4,0	= 1205-1235					600	1,0		
②a	1380	= 0,3 - 1,7								

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery ⑤ Idle		④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1100	130,0-132,0 (128,0-134,0)	1140-1150*		500	126,5-129,5 (124,5-131,5)	100	20-20,5 mmRW **		

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
②a										

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery ⑤ Idle		④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 EIC 2,9 a

2. Edition

En

PES 3 A 80 D 320 RS 1288 RSV 300-1075 A 1 B 722 DR (1)
RSV 300-1075 A 1 B 753 DR (2)

1 - 3 - 2 je 120°

supersedes

company

engine

10.75

Eicher

EDK 3-7

(1) 37 kW(50 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,10-2,30)
2,15-2,25 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes (1) 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1050	9,4-9,5	5,3-5,4	0,2(0,35)	8,2-8,3	4,2 - 4,3	n = 1050
300	7,4-7,6	1,1-1,5	0,2(0,3)			
800/500	- - -	C, Sp.4-5	0,3(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

(1) RSV-722 DR

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0				ca.29	300	5,5	1050	9,4-9,5
	x =	4,6					100	min.19,0	685	9,5-9,7
							300	5,9-6,1	500	9,8-9,9
							370-480	= 2,0		
ca.60 ⑤	1090- 1110- 1280=	1100= 8,4 1140= 4,0 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
1050	54,0-55,0 (52,5-56,5)	1090-1100*	800	48,5-50,5 (47,0-52,0)	100	109,5-119,5	300	7,5	
			500	47,5-49,5 (46,0-51,0)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.80

BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung.
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B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm +0,1
1	2	3	4	5	6	7	8	9	10	11
oose	800	0,3-1,0	-	-	-	ca.27	800	5,5	1050	8,2
	x	4,6					100	min.19,0	905	8,5
ca.58		1090-1100 = 7,2					300	5,9 - 6,1	500	8,8
②a		1105-1135 = 4,0					370-430	= 2,0		
		1275 = 0,3 -1,7								

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤ Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1050	43,0-44,0 (42,0-45,0)	1090-1100*		900	43,5-46,5 (42,5-47,5) 40,5-42,5 (39,5-43,5)	100	109,5-119,5	300	7,5
				600					

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
②a										

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤ Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 EIC 2,9 a 1

1. Edition

En

PES 3 A 80 D 320 RS 1288 Z RSV 300-1000A1B 2084 R (1)
1288 RSV 300-1000A1B 2084 R (2)

supersedes

company:

Eicher

engine:

EDK 3 (37kW-1)

EDK 3-8(31kW-2)

1 - 3 - 2

0 -120-240 ± 0,50(0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,10-2,30)
2,15-2,25 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery "Z" cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery without "Z" cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
980	9,3-9,4	5,2 - 5,3	0,2(0,35)	8,5-8,6	4,3 - 4,4	n = 980
300	6,9-7,1	1,0 - 1,4	0,2(0,3)	7,4-7,6	1,1 - 1,7	
700/500	- -	C, Sp.4-5	0,3(0,4)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

"Z"

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque cont	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
Loose	800	0,3-1,0	-	-	-	ca. 13	300	6,4-6,6	980	9,3-9,4
	x =	1,0					300	6,9-7,1	770	9,3-9,5
	1020-	1030 = 8,3					100	min. 19,0	500	9,5-9,6
ca. 40 ⑤	1025-	1055 = 4,0					450	max. 1,0		
	1190=	0,3 - 1,7					335-395 = 2,0			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
980	53,0-54,0 (51,5-55,5)	1020-1030*	700	49,0-52,0 (47,5-53,5)	100	109,5-116,5	300	7,0	
			500	45,5-48,5 (44,0-50,0)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

3.80

BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung.
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B. Governor Settings

without "Z"

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca.17	300	7,0	1000	8,5-8,6
	x = 2,25								820	8,8-9,0
									500	9,2-9,3
ca.44	1020-1030 = 7,5 1030-1060 = 4,0 1200 =0,3-1,7						300 100 475 355-385	7,4-7,6 min.19,0 max. 1,0 = 2,0		
2a										

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limitat.		3a Fuel delivery characteristics		Starting fuel delivery Idle		5 Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
980	43,5-44,5 (42,0-46,0)	1020-1030*		700	42,0-45,0 (40,5-46,5)	100	109,5-116,5	300	7,5
				500	41,0-44,0 (39,5-45,5)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
2a										

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limitat.		3a Fuel delivery characteristics		Starting fuel delivery Idle		5 Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 EIC 5,9 c

En

4. Edition

PES 6 A 80 D 320 RS 1280 RSV 300-1150 A0B 2003 R

1 - 5 - 3 - 6 - 2 - 4 je 60°

supersedes

company

engine

Eicher

EDK6T

98 kW(133 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,10-2,30)
2,15-2,25 mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1130	10,6+0,1	6,4 - 6,5	0,2(0,35)			
300	6,7-6,9	0,8 - 1,4	0,2(0,3)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca.29	300	6,3	1130	10,6-10,7
	x =	5,3					100	min.19,0	450	10,6-10,8
ca.54	1170-	1180 = 9,7					300	6,7-6,9	350	11,8-12,4
⑤	1235-	1265 = 4,0					430-490	=2,0		
	1405=	0,3-1,7					600	max.1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	3	rev/min	cm ³ /1000 strokes	5	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	5	6	7	8	9
LDA	0,7 bar								
1130	65,0-66,0 (63,5-67,5)	1170-1180*				100	17,2-17,8 mm RW	300	6,8

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

-2-

Test at n = 1130 rev/min decreasing pressure - in bar gauge pressure
increasing

EIC 5,9 c

Testoil-ISO 4113

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel diminution difference mm (1)
1280 with 2003R	0	0,7 0,15 0,09	8,1 - 8,2 10,6 - 10,7 9,9 - 10,0 8,8 - 9,1

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 FOR 5,9a

5. Edition

En

PES 6 A 90 D 210 RS 2465 RSV 250-1200 A0B 743L

supersedes

company:

engine:

5.78

Ford

LKW-Tornado

Port closing difference between control-rod travel 9-21 max. 4-5°

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke (2,45-2,65) RW9 mm (from BDC)
 2,50-2,60

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1000	9,0	5,2 - 5,5	0,4			
	6,0	1,6 - 2,6				
200	9,0	1,9 - 2,9				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 10	300	7,5		
	x =	2,5					100	min. 19		
							300	7,9-8,1		
ca. 56	1240-1	250 = 9,9					600-6	50 = 2,0		
⑤	1330-1	360 = 4,0					800	0 - 1		
	1450 =	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
LDA	0,7 bar		LDA	0 bar					
1200	81,0-82,0 (79,0-84,0)	1240-1250*	400	49,0 - 51,0 (47,0 - 53,0)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.80

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 600 rev/min decreasing pressure - in bar gauge pressure
increasing

FOR 5,9 a

-2-

Testoil-ISO 4113

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel diminution difference mm (1)
2465 with 743L	0,5	0,34	-0,1 - 0,2 -0,6 - 0,7

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps and Governors

PES 6 A 90 D 210 RS 2465 Z RSV 250-1200 A OB 743 L

supersedes

company

engine

Ford

LkW - Tornado

1 - 5 - 3 - 6 - 2 - 4 each 60°

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,45-2,65) mm (from BDC) RW 10,5 Port closing difference control-rod travel 9 mm

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1200	10,9	7,8 - 7,9	0,3(0,45)			
300	+0,1	0,9 - 1,3	0,2(0,4)			
400	7,9-8,1	C, Sp. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 10	300	7,5		
	x =	2,5					100	min. 19		
ca. 56	1240-	1250=9,9					300	7,9-8,1		
⑤	1330-	1360=4,0					600-	660=2,0		
	1450=	0,3-1,7					800	0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
LDA	0,66 bar		LDA	0,4 bar					
1200	78,5-79,5	1240-1250*	LDA	44,5-46,5					
	(76,5-81,5)			(42,5-48,5)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.80

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 1200 rev/min decreasing pressure - in bar gauge pressure
increasing

FOR 5,9 b -2-

Testoil-ISO 4113

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
2465 Z with 743 L	0,66	0,47 0,34 0	10,9 - 11,0 10,6 - 10,8 10,1 - 10,2 10,0 - 10,1

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7 v 5

1. Edition

En

PES 6 A 90 D 410 RS 2596

RSV 350-1250 A0B 1142 L

supersedes

company:

Daimler-Benz

engine

OM 352 A

110 kW(150PS)

1 - 5 - 3 - 6 - 2 - 4 je 60°

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(1,95-2,15)
2,00-2,10

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	12,3	7,6 - 7,7	0,3(0,45)			
350	+0,1 8,5-8,7	1,1 - 1,7	0,2(0,4)			
750	---	C, Sp. 4-5	0,4(0,55)			
500	---	C, Sp. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0				ca. 20	350	5,0	1250	12,3
	x =	3,25					350	9,6-9,8	500	13,4
ca. 66							570-	630=2,0	980	12,9
⑤	1290-	1300 = 11,3								
	1375-	1405 = 4,0								
	1525=	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
LDA 1250	0,7 bar 76,0-77,0 (74,0-79,0)	1290-1300*	LDA 750	0,7 bar 79,0-82,0 (77,0-84,0)	100	69,25-79,25 16,2-16,6 mm RW			
			LDA 500	0 bar 51,5-53,5 (49,5-55,5)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.80

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D. Adjustment Test for Manifold Pressure Compensator

-2-

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

MB 5,7 v 5

Testoil-ISO 4113

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel diminution difference mm (1)
2596 with 1142L	0,7 bar	0,36 0,19 0	13,4 - 13,5 13,1 - 13,2 12,4 - 12,6 12,1 - 12,2

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Testing the hydraulic start-locking device

Locking at 0,8 ± 0,05 bar
Unlocking at 0,3 ± 0,05 bar

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MWM 6,2 d

5. Edition

En

PES 6 A 90 D 320/3 RS 2483 RS 325-1200 A 2 B 777 DR

1 - 5 - 3 - 6 - 2 - 4

0 -60 -120-180-240-300 \pm 0,50 (0,75)

Port closing difference between control-rod travel 9 and max. 3,5 - 4,5°

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

supersedes

company:

engine

8.78

MWM

TD 228-6

110 kW (150PS)

A. Fuel Injection Pump Settings

Port closing at prestroke (2,10-2,30) mm (from BDC) RW9
2,15-2,25

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1180	10,5-10,6	7,3-7,4	0,3(0,45)			
325	7,4-7,6	0,6-1,2	0,2(0,4)			
750/500	-	C, Sp. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca. 17	325	6,0	1180	10,5-10,6
	x =	3,0					325	6,4-6,6	750	11,3-11,5
ca. 44	1220-	1230=9,5					100	min. 19,0	500	11,6-11,7
⑤	1260-	1290=4,0					725	max. 1,0		
	1450=	0,3-1,7					610-	670=2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min		Checking values see page 2					
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
LDA 1180	0,7 bar 73,0-74,0 (71,0-76,0)	1220-1230*	LDA 750	0,7 bar 79,0-82,0			325	6,5	
			LDA 500	0,7 bar 72,0-74,0					
			LDA 500	0 bar 56,5-59,5					
					325	6,25-12,25			

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

-2-

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

MWM 6,2 d

Testoil-ISO 4113

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel- diminution difference mm (1)
2483 with 777 DR	0,7 bar	0,09 0,05 0	11,6 - 11,7 10,6 - 10,7 9,4 - 9,6 9,0 - 9,1

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Checking values

1180 0,7 bar (71,0 - 76,0) $\text{cm}^2/1000 \text{ H.}$
 750 0,7 bar (77,0 - 84,0)
 500 0,7 bar (70,0 - 76,0)
 500 0 bar (54,5 - 61,5)

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 DAF 8,3 k 1

1. Edition

En

PE 6 A 95 D 410 RS 2525, X, Y RSV 250-1200 A 5 B 2013 DL
Test LDA and cold start in accordance with Service Information

supersedes -
company. DAF
engine DN825 (X,Y)
DHR 825

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,95-2,15) RW) mm (from BDC)
2,00-2,10

Port closing difference between
control-rod travel 9 max. 3-4°

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1000	12,6	10,8-11,0	0,3(0,6)			
250	+0,1 6,0-6,2	0,8- 1,0	0,3(0,5)			
600	- - -	C, Sp. 4-5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 16	250	4,1	1000	12,7
	x =	3,0					100	min. 19	400	12,7
							250	6,0-6,2	300	13,0-13,3
ca. 50	1230-	1240=11,6					340-	400=2,0		
⑤	1275-	1305= 4,0					500	0 - 1		
	1450=	0,3- 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	3	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
LDA 1000	0,7 bar 106,5-108,5 (104,5-110,5)	1230-1240*	LDA 600	0 bar 77,5-80,5 (75,5-82,5)			250	6,1	
X 1000	90,5- 92,5	(12,0mmRW)	X 600	77,0-80,0					
Y 1000	99,0-101,0	(12,5mmRW)	y600	77,0-80,0					

Checking values in brackets

* 1 mm less control rod travel than col. 2
8.80

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

1200

rev/min decreasing pressure - in bar gauge pressure
increasing

DAF 8,3 k 1

-2-

Testoil-ISO 4113

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel diminution difference mm (1)
2525 with 2013DL	0,7	0,27 0,23 0	12,6 - 12,7 12,2 - 12,3 11,5 - 11,8 11,2 - 11,3

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 EIC 3,9 b

3. Edition

En

PES 4 A 80 D 420 RS 1277 EP/RSV 300-1050 A1 B2052 DR

supersedes

company

engine

2.79

Eicher

EDK 4 T

1 - 2 - 4 - 3 je 90° ± 0,50
(± 0,75)

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,15-2,25}{(2,10-2,30)}$ mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1030	11,0	6,7 - 6,8	0,2(0,35)			
300	+ 0,1	1,7 - 2,3	0,2(0,3)			
750/500	7,9-8,1	C, 4-5	0,3(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 24	300	7,5	1030	11,0
	X	4,5					100	min. 19	810	11,9
							300	7,9-8,1		
ca. 55	10,0	1070-1080					515-	575=2,0	500	12,8
⑤	4,0	1095-1125					650	0 - 1		
	1300	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat. Note: changed to ... rev/min	③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)			rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
rev/min	cm ³ /1000 strokes	3	4	5	6	7	8	9
1	2							
LDA 1030	0,8 bar 67,5-68,5 (66,0-70,0)	1070-1080*	LDA 750	0,8 bar 84,5-87,5 (83,0-89,0)	100	99,5-109,5	300	8,0
			LDA 500	0 bar 55,5-57,5 (54,0-59,0)				./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.79

D. Adjustment Test for Manifold Pressure Compensator

EIC 3,9 b

-2-

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel - diminution difference mm (1)
1277 with 2052 D	0,80		12,7 - 12,8
		0,50	12,1 - 12,2
		0,23	11,3 - 11,5
		0	10,7 - 10,8

Notes.

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 KHD 6,1 e
8. Edition

En

PES 6 A 95 D 410 RS 2471 RSV 325-1150 A 8 B 707 DL
Komb.-Nr. 0 400 876 274 A 8 C 707 DL

superseded by 3 84
KHD
company
engine BF6L 913 C
132 kW
Combination 2300

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,9 - 2,0
(1,85-2,05) mm (from BDC)

Testoil-ISO 4113

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1150	11,8+0,1	10,8-11,0	0,3(0,6)			
325	7,1-7,3	0,9-1,5	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
Loose	800	0,3 - 1,0 x = 4,75	-	-	-	ca. 21	325	6,7	1150	11,8-11,9
ca. 55	10,8	1190-1200					100	min. 19,0	500	11,8-12,0
2a	4,0	1235-1265					325	7,1-7,3		
	1400	0,3-1,7					590-650	= 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		4a Idle stop	
Test oil temp 40°C (104°F)		Note changed to) rev/min							
rev/min	cm ³ /1000 strokes			rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
LDA 150	0,7 bar 108,0-110,0 (106,0-112,0)	1190-1200*		LDA 850	0,7 bar 102,5-105,5 (100,0-108,0)	100	125,0-135,0 (122,0-138,0) = 15,5 - 15,8 mmRW	-	-
				LDA 500	0 bar 62,0-64,0 (59,5-66,5)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

Geschäftsbereich KH Kundendienst Kfz-Ausrüstung
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D. Adjustment Test for Manifold Pressure Compensator

KHD 6,1 e - 2 -

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel: diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 A..RS 2471 + RSV..A 8 B707DL A 8 C707DL	0,70	0,37 0,09 0	11,8-11,9 11,5-11,6 10,1-10,3 9,9-10,1

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7 o

3. Edition

En

PES6A90D41ORS2293Z

RSV575-1250A1B618L

supersedes

12.74

company:

Daimler-Benz

engine:

OM 352

110 kW(150 PS)

1 - 5 - 3 - 6 - 2 - 4
0 - 60-120-180-240-300

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,10-2,30) mm (from BDC) RW 10,5
2,15-2,25

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1230	11,2	7,4 - 7,5	0,3(0,45)			
575	+0,1 7,4-7,6					

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque cc	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 26	575	7,5		
							610	1,9-2,1		
							580-	640=2,0		
⑤ ca. 55	1265- 1290- 1400=	1275= 10,2 1310= 4,0 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	3		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2			4	5	6	7	8	9
1230	74,5-75,5 (72,5-77,5)	1265-1275*				100	72,25- 82,25		

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.80

Testoil-ISO 4113

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 KHD 1 i

1. Edition

En

PES 6 A 80 D 410/3 RS 2527

supersedes -

company:

KHD

engine:

F 6 L 912

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $\frac{1,90-2,00}{(1,85-2,05)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	11,6-11,7	6,4 - 6,6	0,2(0,35)			
275	8,2-8,4	0,9 - 1,5	0,2(0,3)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ 275/1400AB 798DL

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3				Idle speed regulation Setting point rev/min 7				Torque control rev/min 11	
Control rod travel mm 2		Control rod travel mm 4		Test specifications Control rod travel mm 5		Control rod travel mm 8		Test specifications Control rod travel mm 10		Control rod travel mm 12	
1300	13,6-14,4	1300	14,0	10,6	1445-1460	275	5,5	100	min.7,0	1400	11,6-11,7
1400	Breakway			4,0	1515-1545			275	5,4-5,5	900	12,2-12,5
1650								420-600	460=2,0 0-1	700	13,0-13,1

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes/mm 7	
1400	65,0 - 66,0 (63,5 - 67,5)		700	700	61,5 - 53,5 (60,0 - 65,0)	100	114,5 - 124,5

Checking values in brackets

2.80

J9

BOSCH

 Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung.
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B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 20	325	5,0	1380	11,6-11,7
	X = 4,7						100	min. 19	900	12,2-12,5
ca. 68	1420-1430=10,6						500-560	= 2,0	500	12,8-12,9
②a	1465-1495= 4,0									
	1600=0,3-1,7									

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤ ④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1380	65,0 - 66,0 (63,5 - 67,5)	1420-1430*							

Checking values in brackets

* 1 mm less control rod travel col. 2

B. Governor Settings

EP/RSV 325-1400 A8B54UDL

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 20	325	5,0	1380	11,5-11,6
	X = 4,7						100	min. 19	900	12,1-12,4
ca. 68	1420-1430 = 10,6						325	5,4-5,6	400	12,7-12,8
②a	1465-1495 = 4,0						520-580	= 2,0		
	1600= 0,3 - 1,7									

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤ ④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1380	65,0-66,0 (63,5-67,5)	1420-1430*							

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca.18	325	5,0		
	$X = 4,8$						100	min. 19		
ca-52	1170-1180=11,6						325	5,4-5,6		
②a	1215-1245= 4,0						385-445 = 2,0			
	1300= 0,3- 1,7									

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery ⑤ Idle		④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1130	65,0 - 66,0 (63,5 - 67,5)	1170-1180*							

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
②a										

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery ⑤ Idle		④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MWM 1,5 a

2. Edition

En

PES 2 A 65 ^C 320/3 RS1067 EP/RSV 300-1300 A2B398DR
 3 ^D RS1076 " "
 4 RS1068 " "
 6 RS1074 " "

supersedes 9.64
 company M W M
 engine
 KD/AKD 110,5/210,5..
 ..Z,D,V,S

See overleaf for special governor setting

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Testoil-ISO 4113

A. Fuel Injection Pump Settings

Port closing at prestroke 2,45 + 0,1 mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3 "C"	4	2	3 "D"	6
1000	12	4,3 - 4,7		12	3,2 - 3,7	
	9	2,0 - 2,6		9	1,2 - 2,0	
200	9	1,4 - 2,1		9	0,1 - 0,8	

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	10	11
ca. 48	1300	16,0	without auxiliary spring			ca. 18	300	6,0	See note	
	1350	11,7					150	19 - 21		
	1400	6,7					300	5,7-6,3		
	1380	7,3-9,9	with auxiliary spring				500	1,5-3,6		
⑤	1450	2,3-4,3					700	0 - 1		
	1600	0,3-1,0								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	3	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	rev/min	Control rod travel mm
1	2		4	5	6	7	8		9
Instructions P. 3									

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.77

The special setting for governor, full-load delivery and engine speed in line with the additional information on the nameplate corresponds to the required engine output:

- Operation (1): is no longer changed,
 (2): is adjusted in accordance with the information given on the nameplate
 $Q = (\text{Injected quantity})$ and $n = (\text{Engine speed} - 20 \text{ n less})$;
 (3): is adjusted on account of the adjustment of the delivery as per operation 2, however only until there is a change in the control-rod position as read off under 2. Control-rod travel and injected-quantity measurement as described under 3 and 3a can be dispensed with;
 (4): is no longer tested;
 (5): is no longer tested;
 (6): is adjusted in accordance with information given on nameplate
 $n = (\text{Engine speed})$.

Note:

Due to the extension of the governor nameplate in the case of pumps for MWM engines KD 110.5 and AKD 110.5, as well as KD 210.5 and AKD 210.5, which contains the following data:

n = altered engine speed,
 Q = delivery,
 C = torque-control-spring constant,
 V = initial tension of torque-control spring,

attention is to be paid to the information outlined below:

The changes to the information provided by MWM on the nameplate for the torque-control spring, the constant C and initial tension P_v of which are given in kg/mm and kp respectively, mean that it is no longer necessary to perform travel measurement (operation 3) and injected-quantity measurement (3a).

The torque-control springs in question are designated as follows:

$C = 6$ (WSF 11 P 185 X) $C = 3$ (WSF 11 P 91 X) $C = 10$ (WSF 11 P 235 X)

$C = 12$ (WSF 11 S 66 X) $C = 14$ (WSF 11 P 133X) $C = 16$ (WSF 11 S 65 X)

The constant C is the increase in load referenced to 1 mm spring travel; e.g. loading the spring with 6 kg signifies 1 mm settling of the spring. If customer-service staff have doubts about the initial tension of the torque-control spring, this can only be properly adjusted on a spring scale. In view of the fact that suitable spring scales are rarely encountered, the initial tension can also be measured by loading the correctly installed spring with the prescribed weight and testing the compliance with a dial indicator. Given correct loading, the spring should only yield by 0.02-0.05 mm from the zero position. If not, alter initial tension accordingly by way of shims.

Already adjusted spring retainers can be obtained from MWM in line with the information given on the modified nameplate.

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

Fendt tractors- Output at speed - Engine and tractor type

28 PS / 2100 min⁻¹ - KD/AKD 110,5/210,5D - Farmer 2 D -

1050 36,0-37,0 1070 800 36,5-38,5

30 PS / 2100 min⁻¹ - KD 110,5 D - Farmer 2 D-

1050 37,0-38,0 1070 800 37,5-39,5

30 PS / 2000 min⁻¹ - AKD 210,5 D - 230 GT-

1000 41,0-42,0 1020 800 44,0-46,0

32 PS / 2100 min⁻¹ - KD 110,5 D - Farmer 2 D -

1050 38,0-39,0 1070 800 38,5-40,5

36 PS / 2600 min⁻¹ - KD 110,5 D - Farmer 2 -

1300 39,0-40,0 1320 800 39,0-41,0

38 PS / 2600 min⁻¹ - KD 110,5 D - Farmer 2 -

1300 40,5-41,5 1320 800 40,5-42,5

52 PS / 2300 min⁻¹ - KD 210,5 V - Favorit 3 -

1150 43,0-44,0 1170 800 43,5-45,5

Checking values in brackets

* 1 mm less control rod travel than col 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4

3. Edition

En

PES 6 A 85 D 320/3 RS 2339 RSV 350-1250 A 1 B 279 R

supersedes 11.79
company Motori VM
engine 106 SU, 956 SU

1 - 5 - 3 - 6 - 2 - 4
0 -60 -120-180-240-300 \pm 0,50 (0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Port closing difference
control-rod travel 9 mm

A. Fuel Injection Pump Settings

(2,95-3,15)

Port closing at prestroke

3,00-3,10 RW9 mm (from BDC)

= 6,0-7,0

Testoil-ISO 4113

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
750	9,7-9,8	5,3 - 5,4	0,3(0,45)			
350		0,9 - 1,1	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 16	350	5,5		
⑤ ca. 58	1290- 1300- 1465=	1300=8,7 1330=4,0 0,3-1,7					100 350 500 405-	min.19 5,9-6,1 max.1,0 465 =2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.	③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
rev/min	cm ³ /1000 strokes	3	4	5	6	7	8	9
1	2							
750	53,5-54,5 (51,5-56,5)	1290-1300*			100	109,5- 129,5	1250 500 400	9,7-9,8 9,7-9,9 10,8-11,4

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.80

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Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 EIC 5,9 a
3. . Edition

En

PES 6 A 80 D 320 RS1280

EP/RSV 300-1150 AO B2001DR(1)

300-1150 AO B2005R (2)

300-1150 AO B2003R (3)

supersedes

company Eicher

engine (1) EDK6-4-105 PS

(2) EDK6-5-133 PS

(3) EDK6-7-133 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15+0,1 mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1000	9	4,6 - 5,0	0,4			
	6	2,0 - 2,8				
200	6	0,1 - 0,7				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

EP/RSV..2001DR (1)

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca. 49	1070 1200 1240	16,0 7,4 4,6	without auxiliary spring			ca. 26	300	6,2	1150	0
⑤	1150 1240 1400	ca. 9,0 ca. 4,0 0,3 - 1,7					100 300 450 650	19 - 21 6,0-6,3 2,2-4,2 0 - 1	400	0,6-0,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational- speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	3		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2			4	5	6	7	8	9
(1) 1150	51,5-52,5 (50,0-54,0)	1190-1200*		900	48,5-51,5 (47,0-53,0)	100	16,3-16,9 mm RW	300	6,2
				500	46,5-48,5 (45,0-50,0)	300	7,5-13,5		./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.78

Testoil-ISO 4113

The numbers denote the sequence of the tests

EP/RSV .. 2005R (2)

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca. 53	1150	16,0	without auxiliary spring			ca. 27	300	5,0	-	-
	1250	9,8					100	19 - 21		
	1310	5,6					300	5,9-6,1		
ca. 51	1150	ca. 10,6	with auxiliary spring				450	2,3-4,1		
	1270	ca. 4,0					650	0 - 1		
2a	1460	0,3-1,7								

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limitat.		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)				Idle			
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
(2)									
1150	65,0 - 66,0 (63,5 - 67,5)	1190-1200*				100	16,0-16,6 mm RW	300	6,0
						300	13,5-19,5		

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
2a										

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limitat.		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)				Idle			
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

The numbers denote the sequence of the tests

EP/RSV..2003R (3)

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca. 53	1150 1250 1310	16,0 10,0 6,0	without auxiliary spring			ca. 27	300	6,8	-	-
							100	19 - 21		
							300	6,7-6,9		
							500	1,2-4,0		
②a	1200 1300 1470	ca. 9,7 ca. 4,0 0,3-1,7					650	0 - 1		

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limit		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤ Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm³/1000 strokes	3		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2			4	5	6	7	8	9
(3)	LDA 0,7 bar	1190-1200*				100	17,2-17,8 mm RW	300	6,8
1150	65,0-66,0 (63,5-67,5)					300	8,5-14,5		

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure CompensatorTest at n = 1150 rev/min ~~decreasing~~ ~~increasing~~ pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	Control rod travel
	Gauge pressure = bar	Gauge pressure = bar	mm
1280 with 2003R	0	0,09 0,15 0,68	8,1 - 8,2 mm 8,8 - 9,1 9,9 - 10,0 10,6 - 10,7

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

En

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 15,0d

2. Edition

En

PE 10A 95D 520/5 LS 2604 RQV 250-1150 AB1104 R
Komb.-Nr. 0 400 649 221

supersees 80

company MAN

engine 2840 MF

268kw (364 PS)

10 - 9 - 4 - 1 - 8 - 7 - 6 - 3 - 5 - 2
0 - 45- 72-117-144-189-216-261-288-333° $\pm 0,5^\circ$ ($\pm 0,75^\circ$)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,65-1,85) mm (from BDC) Cyl. 10; RW=9,0 - 12,0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	13,0+0,1	12,5 - 12,7	0,3(0,6)			
250	6,9-7,1	0,9 - 1,5	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
max.	1150	15,2-17,8	-	-	-	ca.12	100 250	min.8,5 6,9-7,1	200 520 830 1150	0,5-0,7 4,6-4,9 5,8-6,1 7,8
ca.66	12,0 4,0 1355	1190-1200 1280-1310 0 - 1,0				(3a)				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1150	124,5-126,5 (122,5-128,5)	1190-1200*	650 500	113,5-117,5 (111,5-119,5) max. 118,5 (max.120,5)	100	15,9-16,5 mm RW	1150 500 1010 1080	13,0+0,1 13,5+0,1 13,4+0,2 13,0+0,3

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 OMB 7,4 b 1

1. Edition

En

PES 6 A 90 D 410 RS 2502

RQV 250-1300 A B 1071 DL

supersedes

company: OMB

engine 8360.05.300

1 - 5 - 3 - 6 - 2 - 4

0 -60-120-180-240-300 ± 0,50 (0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{2,15-2,25}
(2,10-2,30) mm (from BDC) Start of delivery mark: Cyl. 1

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	12,2-12,3	8,4 - 8,5	0,3(0,45)			
250	9,9-10,1	2,9 - 3,3	0,2(0,4)			
800/500	-	C, Sp. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 66	1350 1600	15,0-17,6 0 - 1				ca. 21	100 250	min. 11,5 9,9-10,1	1350	8,3
ca. 62	11,3 4,0	1340-1350 1465-1495				3a	780-840 = 2,0 250-700			

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ④a	Fuel delivery characteristics ⑤a high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1300	84,0-85,0 (82,0-87,0)	1340-1350*	800 500	82,0-85,0 (80,0-87,0) 74,0-76,0 (72,0-78,0)	100 250 100- 24 V-Electromagnet	111,25-123,25 29,25-33,25 (80)	1300 1000 700 500	12,3-12,4 12,3-12,4 12,4-12,5 12,5-12,6

Checking values in brackets

* 1 mm less control rod travel than col. 2

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 OMB 7,4 b 2

1. Edition

40

En

PES 6 A 90 D 410 RS 2566

RQV 300-1400 AB 1053 DL

supersedes _

company: OMB

engine 8360.04.300

1 - 5 - 3 - 6 - 2 - 4

0 -60-120-180-240-300 ± 0,50(0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,15-2,25}{(2,10-2,30)}$ mm (from BDC) Start of delivery mark: Cyl.1

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	10,8-10,9	7,2 - 7,4	0,3(0,45)			
300	8,4-8,6	1,1 - 1,7	0,2(0,4)			
800/500	-	C, Sp.4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1400 1750	15,2-17,8 0 - 1				ca. 15	100 300 800	min. 10,0 8,4-8,6 max. 1	1450	8,1
ca. 59	9,8 4,0	1440-1450 1585-1615				3a	625-685 = 2,0 375-475			

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1400	72,5-73,5 (70,5-75,5)	1440-1450*	800 500	56,5-69,5 (64,5-71,5) 62,5-65,5 (60,5-67,5)	100 100 24 V-Electromagnet	114,25-124,25 (80)	1400 825 675 500	10,8-10,9 10,8-11,1 11,0-11,2 11,1-11,2

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

J24

J24

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1.60

WPP 001/4 OMB 4.4 d

3. Edition

En

supersedes 11.74

company OMB

engine CO 3

PES 4 A 90 D 410 RS 2195 Z RSV 325-1050 A 4 B 1079 DL

1 - 3 - 4 - 2
0 -90 -180-270

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,10-2,30)

Port closing at prestroke

2,15-2,25

mm (from BDC)

RW 10,5

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1050	11,3	7,9 - 8,0	0,3(0,45)			
	+ 0,1					
325	6,4 - 6,6	0,9 - 1,5	0,2(0,4)			
600	- - -	C, Sp. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca.26	325	6,0	1050	11,3-11,4
	X =	4,5								
ca.63	1090-1100=	10,3					100	min.19,0	500	11,3-11,5
	1135-1145=	4,0					325	6,4-6,6		11,5-12,1
	1300=	0,3 -1,7	455-515 =	2,0						
②							575	0 - 1,0	375	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp. 40°C (104°F)		6 Rotational-speed limit Note: changed to) rev/min		3a Fuel delivery characteristics rev/min cm ³ /1000 strokes		Starting fuel delivery Idle rev/min cm ³ /1000 strokes		5 4a Idle stop rev/min Control rod travel mm	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
1050	79,5 - 80,5 (77,5 - 82,5)		600	69,5 - 72,5 (67,5 - 74,5)	100	19,0-21,0			

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 8,3 i 3

2. Edition

En

PE 6 A 90 D 410 RS 2524 / RSV 250-750 A 7 B 2124 L
1 - 5 - 3 - 6 - 2 - 4 / 0 - 60 - 120 - 180 - 240 - 300

supersedes 12.80
company DAF
engine DH, DU 825

** Cold-start test on EP/RSV governor according
to Service Information

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,25-2,46)

Port closing at prestroke 2,30-2,40 mm (from BDC)

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	9,4-9,5	7,7 - 7,9	0,4(0,55)			
250	6,3-6,5	1,9 - 2,3	0,2(0,4)			
Port-closing difference between control-rod travel 9 mm and max. 4,5-5,5°						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed 4 5 6			4 Lower rated speed Control-lever deflection in degrees 7 rev/min 8			3 Torque control Control rod travel rev/min 10		11
	Control rod travel mm 2	Control rod travel mm rev/min 3					Control rod travel mm 9				
lose	800	0,3-1,0				ca.16	250	5,8	750	9,4-9,5	
	X	3,25					100	min.19	700	9,4-9,7	
							260-320	= 2,0			
ca.41		760-770 = 8,4					380				
2a		770-790 = 4,0									
		940=0,3 - 1,7									

The numbers denote the sequence of the tests

*** Control-rod travel difference between
n = 750 min⁻¹ and 700 min⁻¹ max. 0.2 mm

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp. 40°C (104°F) rev/min 1		6 Rotational-speed limitat. Note: changed to ... rev/min 3		3a Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle rev/min 6		5 Idle stop Control rod travel mm 9	
	cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes 7		
750	77,0-79,0 (75,0-81,0)	760-770				100	19,0-21**		

Checking values in brackets

* 1 mm less control rod travel than col 2

6.81

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K19

K19

Test Specifications Fuel Injection Pumps **(1A)** and Governors

40

WPP 001/4 DAF 8,3 i 1

2. Edition

En

PE 6 A 90 D 410 RS 2524 RSV 250-1200 A 5 B 2012 DL

** Cold-start test on EP/RSV governor according to Service Information

supersedes 8,80
company DAF
engine DH 825

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,25-2,45) Port closing difference between control-rod travel 9 and max. 4,5-5,5°
2,30-2,40 RW9 mm (from BDC)

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9, - +0,1	7,0 - 7,1	0,3(0,45)			
250	6,5-6,7	0,9 - 1,5	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control- lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0				ca. 15	250	5,5	1000	9,4-9,5
	X	= 4,5					100	min. 19	600	9,4-9,6
							250	5,9-6,1	300	10,2-10,5
ca. 49		1240-1250 = 8,4					500	0 - 1		
2a		1265-1295 = 4,0					540-600	= 2,0		
		1500 = 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed initial		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to) rev/min:				Idle			
rev/min 1	cm ³ /1000 strokes 2	3	4	cm ³ /1000 strokes 5	6	rev/min 7	cm ³ /1000 strokes 8	rev/min 9	Control rod travel mm 10
1000	70,0-71,0 (68,0-73,0)	1240-1250*			100	19,0-21,0 **			

Checking values in brackets

* 1 mm less control rod travel than col. 2

12.80

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Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 8,3 n

1. Edition

En

PE 6 A 95 D 410 RS 2575 RSV 250-750 A 7 B 2124 L

1 - 5 - 3 - 6 - 2 - 4

0 -60 -120-180-240-300

See Service Information VDT-I-DAF 004.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

supersedes -

company DAF

engine DH, DU 825

A. Fuel Injection Pump Settings

Port closing at prestroke (1,95-2,15) mm (from BDC)
2,00-2,10

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque control valve) mm 6
750	12,5 ^{+0,1}	10,0-10,2	0,4(0,7)			
250	6,0-6,2		0,2(0,4)			
Port-closing difference between control-rod travel 9 mm and max. 3 - 4°						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11 ± 0,1
loose	800	0,3-1,0				ca. 15	250	5,6	750	12,3
	X = 3,0						100	19,0		
ca. 40		760-770 = 11,2					260-320	=2,0	700	12,4
2a		770-790 = 4,0					380	0- 1		
		940 = 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational speed limit		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp. 40°C (104°F)		Note changed to) rev/min				Idle			
rev/min 1	cm ³ /1000 strokes 2	3	4	cm ³ /1000 strokes 5	6	rev/min 7	cm ³ /1000 strokes 8	rev/min 9	Control rod travel mm 10
750	98,5-100,5 (96,5-102,5)	760-770*							

Checking values in brackets

* 1 mm less control rod travel than col 2

12.80

K21

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1/3a

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 6,2 m

1. Edition

En

PE 6 A 85 D 320 RS 2546

RSV 250-750 A 7 B.2125 R

supersedes

company

engine

DAF

DD 75 DF/615DT

** Set idle-speed auxiliary spring at 2 mm control-rod travel.

See Service Information VDT-I-DAF 004.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,10-2,20)

Port closing at prestroke

2,15-2,25

mm (from BDC)

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	12,2	6,3 - 6,5	0,3(0,45)			
250**	+ 0,1 8,4-8,6		0,2(0,4)	Port-closing difference between control-rod travel 9 mm and max. 3 - 4°		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0				ca. 16	250	8,0	750	12,2-12,3
	X	= 3,0					325-385	= 2,0	700	12,2-12,5
ca. 40	760-770 = 11,2									
②a	770-790 = 4,0									
	930 = 0,3-1,7									

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limit		③a Fuel delivery characteristics		Starting fuel delivery ⑤		④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to rev/min							
rev/min 1	cm ³ /1000 strokes 2	3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
750	63,5-65,5 (61,5-67,5)	760-770*				100	19,0-21,0		

Checking values in brackets

* 1 mm less control rod travel than col 2

12.80

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K22

K22

Test Specifications Fuel Injection Pumps and Governors

1A

40

WPP 001/4 SCL 9,5 c

1. Edition

En

PES 4 A 95 D 410 RS 2613

RSV 325-1000 A 1 B 2113 L

supersedes

company

engine

Schlüter

SDMT 110 W 4

1 - 3 - 4 - 2
0 - 90 - 180 - 270

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(1,75-1,95)

Port closing at prestroke 1,80-1,90 mm (from BDC) RW 10,5

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	11,2	9,7 - 9,9	0,3(0,6)			
325	+ 0,1 6,7-6,9	0,9 - 1,5	0,3(0,5)			
500	---	C, Sp.4-5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm +0,1 11
loose	800	0,3-1,0				ca.28	325	6,3	1100	11,2
	X =	5,5					100	min.19,0	500	12,2
ca.58	1040-1050 =	10,2					325	6,7-6,9	730	11,8
2a	1095-1110 =	4,0					505 - 565 =	2,0		
	1270 =	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery Idle		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to) rev/min							
rev/min 1	cm ³ /1000 strokes 2	3	4	5	6	7	8	9	
1000	95,5-97,5 (93,5-99,5)	1040-1050*	500	98,5 - 101,5 (96,5 - 103,5)	100	19,0-21,0 mm RW			

Checking values in brackets

* 1 mm less control rod travel than col 2

K23

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12.80

Test Specifications Fuel Injection Pumps **(1A)** and Governors

40

WPP 001/4 MWM

En

PES 3 A 80 D 320/3 RS 1331 RSV 325-1500 A 2 B 505 DR

supersedes

company

engine

MWM

D 226-3, 916-3

1 - 2 - 3 je $120^\circ \pm 0,5^\circ (\pm 0,75^\circ)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $(2,15-2,35)$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque control valve) mm 6
1480	9,0-9,1	4,75 - 4,85	0,2(0,35)			
325	7,4-7,6	0,9 - 1,5	0,2(0,3)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3 - 1,0	-	-	-	ca.57	325	5,5		
	X =	3,5								
ca. 18,5	8,0	1530-1540					100	min.19,0		
	4,0	1570-1600					325	5,9-6,1		
	1740	0,3-1,7					410-470	= 2,0mm		
2a										

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery		5		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...				Idle				Control rod	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3		4	5	6	7	8			9
1480	48,0-49,0 (46,5-50,5)	1530-1540*				100	89,5-105,5 / RW= 19,0-21,0 mm				
						325	9,5 -15,5				

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.81

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Testoil-ISO 4113

Test Specifications Fuel Injection Pumps **(1A)** and Governors

40

WPP 001/4 DAF 8,3 i 3

1. Edition

En

PE 6 A 90 D 410 RS 2524

RSV 250-750 A 7 B 2124 L

supersedes

-

1 - 5 - 3 - 6 - 2 - 4

company

DAF

0 -60 -120-180-240-300

engine

DH, DU 825

**** Cold-start test on EP/RSV governor according to Service Information**

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port-closing difference between
control-rod travel 9 mm and max.
4,5-5,5°

Port closing at prestroke (2,25-2,46)
2,30-2,40 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	11,1 ^{+0,1}	10,4 - 10,6	0,4(0,55)	-		
250	6,3-6,5	1,9 - 2,5	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

(1) Upper rated speed rev/min Degree of deflection of control lever mm 1			Intermediate rated speed 4 5 6			(4) Lower rated speed Control-lever deflection in degrees rev/min mm 8 9			(3) Torque control Control rod travel rev/min mm ± 0,1 10 11	
loose	800	0,3-1,0				ca.16	250	5,8	750	11,2
	X =	3,25					100	min.19	700	11,3
ca.41	760-770 = 10,1 770-790 = 4,0 940 = 0,3-1,7						260-320 = 2,0 380 0 - 1			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Full-load stop Test oil temp 40°C (104°F) rev/min cm ³ /1000 strokes 1 2		(6) Rotational-speed limit Note changed to) rev/min 3		(3a) Fuel delivery characteristics rev/min cm ³ /1000 strokes 4 5		Starting fuel delivery Idle rev/min cm ³ /1000 strokes 6 7		(4a) Idle stop Control rod travel rev/min mm 8 9	
750	104,0-106,0 (102,0-108,0)	760-770*				100	19,0-21**		

Checking values in brackets

* 1 mm less control rod travel than col 2

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12.80

L1

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4

EIC 3,9 b

1. Edition

En

PES 4 A 80 D 420 RS 1277 EP/RSV 300-1050 A1 B2052 DR

supersedes

company

engine

Eicher

EDK 4 T

1 - 2 - 4 - 3 je 90° ± 0,50
(± 0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,15-2,25}{(2,10-2,30)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1030	11,0	6,7 - 6,8	0,2(0,35)			
	+ 0,1					
300	7,9 - 8,1	1,7 - 2,3	0,2(0,3)			
750/500	- - -	C, 4 - 5	0,3(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque contro.	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11 ±0,1
loose	800	0,3-1,0				ca.24	300	7,5	1030	11,0
	X =	4,5					100	min.19	850	12,7
							300	7,9-8,1	500	12,8
							515-575	= 2,0		
							650	0 - 1		
ca.55	10,0	1070-1080								
2a	4,0	1095-1125								
	1300	0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limitat		3a Fuel delivery characteristics		Starting fuel delivery 5		4a Idle stop	
Test oil temp 40°C (104°F)		Note: changed to) rev/min						Control rod travel mm	
rev/min 1	cm ³ /1000 strokes 2	3	4	5	6	7	8	9	
LDA 1030	0,8 bar 67,5 - 68,5 (66,0 - 70,0)	1070-1080*	LDA	0,8 bar 84,5 - 87,5 (83,0 - 89,0)	100	99,5-109,5			
			LDA 500	0 bar 55,5 - 57,5 (54,0 - 59,0)					./.

Checking values in brackets

* 1 mm less control rod travel than col 2

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10.78

Testoil-ISO 4113

L2

L2

D. Adjustment Test for Manifold Pressure Compensator

-2-

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure increasing

EIC 3,9

Testoil-ISO 4113

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel diminution difference mm (1)
1277 with 20520	0,80	0,50 0,23 0	12,8 - 12,9 12,3 - 12,4 11,5 - 11,8 11,0 - 11,1

Notes

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps and Governors

WPA 001/4 MB 5,7 u
2. Edition

En

PES 6 A 90 D 410 RS 2569 RQV 300-1 AB1065DL (1)
RQV 300-1400 AB1077DL (2)

supersedes 5.79
company Daimler-Benz
engine OM 352
(96 kW - 130 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,25-2,35 mm (from BDC)
(2,20-2,40)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery (1 and 2) cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	10,6	6,1 - 6,3	0,3(0,45)			
300	+ 0,1 5,5-5,7	1,1 - 1,7	0,2(0,4)			
1000/500	- - -	C, 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

AB1065DL (1)

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 66	1400 1700	15,2-17,8 0 - 1,0				ca. 11	100 300 540-600 700	min. 7,1 5,5-5,7 = 2,0 max. 1	300 490 1450	1,3 2,5-2,7 8,6
ca. 60	9,7 4,0	1440-1450 1550-1580				400-470 (3a)				

Torque control travel a = 0,35 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9 + 0,1
1400	61,5-62,5 (59,5-64,5)	1440-1450*	1000	59,5-61,5 (57,5-63,5)	100	12,2-12,8	1400 1000 800 500	10,5 10,7 11,4 11,7
			500	53,0-56,0 (51,0-58,0)		100-220 (80-240)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

B. Governor Settings

MB 5,7 u
AB1077DL

-2-

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1400 1700	15,2-17,8 0 - 1	-	-	-	ca. 12	100 300 540-600 = 2,0 700	min. 7,1 5,5-5,7 0 - 1	300 800 1440	1,1-1,4 4,3-4,6 8,1
ca. 60	9,7 4,0	1440-1450 1550-1580				(3a)				

Torque control travel a = 0,35 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery Idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1440	61,5-62,5 (59,5-64,5)	1440-1450*	1000	59,5-61,5 (57,5-63,5)	100	12,2-12,8	1400 920 755 500	10,6 10,8 10,9 10,9
		705-720** (ZDA)	500	53,0-56,0 (51,0-58,0)				

Checking values in brackets

* 1 mm less control rod travel than col 2

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
						(3a)				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery Idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col 2

En

L5

L5

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MAN 9,7 1 3

En 4. Edition

Testoil-ISO 4113

PES 6 A 95 D 410 RS 2108 R

RSV 550-1100 A 1 B 607 L

supersedes 5.84

Komb.-Nr. 0 400 876 304

A 1 C 607 L

company

MAN-RABA

engine

D 2356 HM6

50 kW (204 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $\overset{1,7-1,8}{(1,65-1,85)}$ mm (from BDC) $RW = 9,0-12,0$ mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1080	12,7+0,1	11,5 - 11,7	0,35(0,6)			
550	6,4 - 6,6	1,1 - 1,7	0,35(0,5)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0	-	-	-	ca. 25	550	6,0	1080	12,7+0,1
ca. 50	X	= 3,25					100	min. 19,5	400	12,7+0,2
⑤	1120-1130	= 11,7					550	6,4 - 6,6	250	13,9+0,6
	1170-1200	= 4,0					725	max. 1,0		
	1330	= 0,3-1,7					625-685	2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm³/1000 strokes 2	3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9	
1080	114,5-116,5 (112,5-118,5)	1140-1150*	700	110,0-113,0 (108,0-115,0)	-	-	-	-	
			500	max. 112,0 (max. 114,0)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.85

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Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 6,2 i 3

1. Edition

En

PE 6 A 90 D 320 RS 2547
PE 6 A 90 D 320 RS 2577

RSV 250-900 A7B 2061 R

supersedes -
company DAF
engine DT 615, DF 615

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,2-2,3$
(2,15-2,35) mm (from BDC) / RW 9mm

Port-closing difference between
control-rod travel 9 mm and max.
 $2,5-3,5^\circ$ camshaft.

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	10,5+0,1	8,5-8,6	0,3(0,45)			
250	5,9-6,1	1,3-1,9	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed 4 5 6			4 Lower rated speed Control-lever deflection in degrees 7 rev/min 8			3 Torque control Control rod travel rev/min 10 mm 11	
	Control rod travel mm 2	Control rod travel mm rev/min 3					Control rod travel mm 9			
loose	800	0,3-1,0	-	-	-	ca. 19	250	5,4-5,6	650	10,5+0,1
	X	4,0							370	11,7+0,6
ca. 53	9,5	940-950					100	min. 19,0		
2a	4,0	945-975					250	6,0-6,1		
	1100	0,3-1,7					450	max. 1,0		
							290-360	= 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp. 40°C (104°F) rev/min 1		6 Rotational-speed limit Note: changed to) rev/min 3		3a Fuel delivery characteristics rev/min 4 cm ³ /1000 strokes 5		Starting fuel delivery Idle rev/min 6 cm ³ /1000 strokes 7		4a Idle stop Control rod travel rev/min 8 mm 9	
900	85,0-86,0 (83,0-88,0)	940-950*	-	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

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Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MAN 11,1 p 10

En

2. Edition

Testoil-ISO 4113

PES 6 A 95 D 410 LS 2542 RSV 250-1100 A1B 1124

supersedes 5.81

company RVI-Saviem

engine MAN D2566 MSFV

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $1,5 - 1,6$
 $(1,45 - 1,65)$ mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1100	11,7+0,1	11,3 - 11,5	0,3(0,6)			
250	5,9-6,1	0,9 - 1,5	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca. 23	250	5,5	1100	11,7-11,8
	X =	4,75					100	min. 19,5	500	12,2+0,1
							250	5,9-6,1	915	11,9+0,2
							365-425	2,0		
⑤ ca. 60	10,7	1140-1150								
	4,0	1185-1215								
	1350	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
1100	112,5-114,5 (110,5-116,5)	1140-1150*	700	102,5-105,5 (100,5-107,5)	100	12,5-131,5 15,2- 16,0 mm RW	-	-	
			500	max. 106,5 (max. 108,5)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 DAF 6,2 m

2. Edition

En

PE 6 A 85 D 320 RS 2546 RSV 250-750 A 7 B 2125 R

** Set idle-speed auxiliary spring at 2 mm control-rod travel.
See Service Information VDT-I-DAF 004.

supersedes 12.80
company DAF
engine DD 575 DF/615 DT

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15-2,25 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	12,1+0,1	6,0 - 6,2	0,3(0,45)			
250	8,4-8,6		0,2(0,4)	Port-closing difference between control-rod travel 9 mm and max. 3 - 4°		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0				ca. 16	250	8,0	750	12,1-12,2
	X =	3,0						**	700	12,1-12,4
ca. 40	760-770 =	11,1					325-385	2,0 mm		
2a	770-790 =	4,0								
	930 =	0,3-1,7								

The numbers denote the sequence of the tests

*** Control-rod travel difference between
n = 750 min⁻¹ and 700 min⁻¹ max. 0.2 mm

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		5 Starting fuel delivery Idle		4a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to .)							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
750	60,5-62,5 (58,5-64,5)	760-770*		-	-	100	19,0-21,0	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

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L10

7.81

Test Specifications Fuel Injection Pumps 1A and Governors

40

WPP 001/4 DAF 6,2 n

1. Edition

En

PE 6 A 90 D 320 RS 2577

RSV 250-750 A 7 B 2125 R

supersedes

company

engine

DAF

DD 575

** Set idle-speed auxiliary spring at 2 mm control-rod travel.
See Service Information VDT-I-DAF 004.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,15-2,35)

Port closing at prestroke 2,20-2,30

mm (from BDC)

Port-closing difference between
control-rod travel 9 mm and max.
2,5-3,5°

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference ° cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	11,0	7,4 - 7,6	0,4(0,55)			
250**	+ 0,1 5,9-6,1		0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Upper rated speed rev/min			Intermediate rated speed			4 Lower rated speed			3 Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
loose	800	0,3-1,0				ca. 15	250	5,5	750	11,0-11,1
	X =	3,0					100	min. 19	700	11,0-11,3
ca. 40		760-770 = 10,0 770-790 = 4,0 940 = 0,3-1,7					260-320 = 2,0 380 0 - 1			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational-speed limit		3a Fuel delivery characteristics		Starting fuel delivery		4a Idle stop	
Test oil temp. 40°C (104°F)		Note changed to rev/min		rev/min		Idle		Control rod travel	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	mm 9
750	74,0 - 76,0 (72,0 - 78,0)	760-770*				100	19,0-21,0		

Checking values in brackets

* 1 mm less control rod travel than col 2

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12.80

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Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 DAF 8,3 i

2. Edition

En

PE 6 A 90 D 410 RS 2524 RQ 225/1200 AB 1008 L

supersedes 3.78
company DAF
engine: DH 825

Port closing difference between
control-rod travel 9 and max. 4,5-5,5°

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,25-2,45)
Port closing at prestroke 2,30-2,40 RW9 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9,4	7,0 - 7,1	0,3(0,45)			
225	+ 0,1 6,5-6,7	0,9 - 1,5	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 10		Torque control rev/min 11	
	Control rod travel mm 2		Control rod travel mm 4		rev/min 6		Control rod travel mm 8		rev/min 9		Control rod travel mm 12
650	19,2-20,8	650	20,0	8,4	1245-1260	225	8,7	100	min.10,2		
1500	0 - 1	VH ca. 49°	4,0	1325-1355				225 410- 550	8,6-8,8 450=2,0 0 - 1		

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
	cm ³ /-1000 strokes 2				cm ³ /-1000 strokes 5		Control rod travel mm 7
1000	70,0-71,0 (68,0-73,0)	600					

Checking values in brackets

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MAN 11,1 p 8
3. Edition

En

PES 6 A 95 D 410 LS 2541

RQ 250/1100 AB 1107 L

supersedes 2.81
company MAN
engine D 2566 MUH/200
MUM/200

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,45-1,65)

mm (from BDC)

Start of delivery mark: Cyl. 6

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	9,6-9,8	9,2 - 9,5	0,4(0,6)			
250	6,9-7,1	0,9 - 1,5	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider		Full-load speed regulation				Idle speed regulation				Torque control	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Test specifications rev/min 5	Control rod travel mm 6	Setting point rev/min 7	Control rod travel mm 8	Test specifications rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600	15,6-16,4	600	16,0	8,6	1145-1160	250	7,0	100	mind.8,4	1100	9,5-9,6
								250	6,9-7,1	980	9,7-10,0
1300	max. 1,0			4,0	1210-1240			450	max.1,0	885	10,6-10,8
										600	11,1-11,2

Torque-control travel on flyweight assembly dimension a = 0,8 mm

Speed regulation: At 1145-1160 min.-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp, 40°C (104°F)		Control rod stop	Fuel delivery characteristics		Starting fuel delivery	
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7
1100	90,5 - 93,5 (88,5 - 95,5)		700	102,5 - 104,5 (100,5 - 106,5)	100	124,0 - 134,0 14,4-15,0
			500	102,5 - 106,5 (100,5 - 108,5)		

Checking values in brackets

8.81

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②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4

1. Edition

En

PES 6 A 95 D 410 LS 2542 RQ 250/1050 ABV 15133

supersedes

company:

MAN

engine:

1 - 5 - 3 - 6 - 2 - 4
0 - 60-120-180-240-300

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(1,45-1,65)

1,50-1,60

mm (from BDC)

RW 10,5

Zy1.6

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1050	12,2	12,4 - 12,6	0,3(0,6)			
	+0,1					
250	6,7-6,9	0,9 - 1,5	0,3(0,5)			
500	---	C, Sp. 4-5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 10		Torque control rev/min 11	
	Control rod travel mm 2				rev/min 6		Control rod travel mm 8				Control rod travel mm 12
600	15,6-16,4	600	16,0	11,2	1095-1110	250	6,8	100	min.8,2		
				4,0	1210-1240			250	6,7-6,9		
1300	0-1,0							475	0 - 1		
								385-425	=2,0		

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
	cm ³ /-1000 strokes 2				cm ³ /-1000 strokes 5		cm ³ /1000 strokes/mm 7
1050	123,0 - 125,0 (121,0 - 127,0)			500	106,5-111,5 (104,5-113,5)	100	124,0-134,0

Checking values in brackets

10.80

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L16

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 5,7 u

1. Edition

40

En

PES 6 A 90 D 410 RS2569

RQV 300-1400 AB1065DL (1)

RQV 300-1400 AB1077DL (2)

supersedes -

company: Daimler-Benz

OM 352

engine: (96 kW - 130 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,25-2,35
(2,20-2,40) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	10,6	6,1 - 6,3	0,3(0,45)			
300	+0,1 5,5-5,7	1,1 - 1,7	0,2(0,4)			
1000/500	- - -	C, 4 -5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

AB1065DL (1)

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1400 1700	15,2-17,8 0 - 1	-	-	-	ca. 12	100 300 540-600 = 2,0 700	min. 7,1 5,5-5,7 0 - 1	300 800 1440	1,1-1,4 4,3-4,6 8,1
ca. 60	9,7 4,0	1440-1450 1550-1580				3a				

Torque control travel $\epsilon = 0,35$ mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery Idle switching point		Torque-control	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1400	61,5-62,5 (59,5-64,5)	1440-1450*	1000 500	59,5-61,5 (57,5-63,5) 53,0-56,0 (51,0-58,0)	100	12,2-12,8	1400 920 755 500	10,6 10,8 10,9 10,9 ./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

5,70

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B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1400 1700	15,2-17,8 0 - 1	-	-	-	ca. 12	100 300 540-600 700	min. 7,1 5,5-5,7 =2,0 0 - 1	300 800 440	1,1-1,4 4,3-4,6 8,1
ca. 60	9,7 4,0	1440-1450 1550-1580				3a				

Torque control travel a = 0,35 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1440	61,5-62,5 (59,5-64,5)	1440-1450* 705-720**	1000 500	59,5-61,5 (57,5-63,5) 53,0-56,0 (51,0-58,0)	100	12,2-12,8	1400 920 755 500	10,6 10,8 10,9 10,9

Check in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
						3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 5,7 u 2

3. Edition

En

PES 6 A 90 D 410 RS2568 RQV 300-1400 AB 1066-1DL (1)
RSV 350-1400 A0 B2075L (2)

supersedes 11.79
company: Daimler-Benz
engine: OM 352 A
(1-127kW(173PS)
(2-123kW(167PS))

** Set idle-speed auxiliary spring at 2 mm control-rod travel.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,05-2,15 mm (from BDC)
(2,00-2,20)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	12,9-13,0	7,7 - 7,8	0,3(0,45)	13,0-13,1	7,5 - 7,7	n = 350
300	8,9-9,1	1,1 - 1,7	0,2(0,4)	5,4-5,6	0,7 - 1,3	
800/500	- - -	C, 4 - 5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel ①	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1400 1800	15,2-17,8 0 - 1	-	-	-	ca. 16	100 300 740-800 = 2,0	min. 10,5 8,9-9,1	300 490 1450	1,3 2,5-2,7 8,6
ca. 62	12,0 4,0	1440-1450 1590-1620				400-470 3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ④a	Fuel delivery characteristics ⑤a high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1400	0,7 bar 77,0-78,0 (75,0-80,0)	1440-1450*	LDA 800	0,7 bar 81,5-83,5 (79,5-85,5)	100	72,25-82,25	1400 1150 1075 500	12,9-13,0 13,1-13,4 13,7-13,9 14,0-14,1
			LDA 500	0 bar 49,5-51,5 (47,5-53,5)	100	220(80-240)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

The numbers denote the sequence of the tests

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 19	350	5,5	1380	13,0-13,1
	x	= 2,75					100	min.19		
ca. 52	12,0	1420-1430					350	5,4-5,6	1050	13,2-13,4
	4,0	1475-1505					370-430	= 2,0	500	13,6-13,7
②a	1640	0,4 - 1,7					500	0 = 1		

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop .		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery ⑤		④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)				Idle			
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
1380	75,5-76,5 (73,5-78,5)	1420-1430*		900	77,5-80,0 (75,5-82,0)	100	89,25 99,25		

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n = rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel-diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
2568 with 1066-1D	0,7	0,45 0,15 0	14,0 - 14,1 13,4 - 13,5 12,1 - 12,3 11,6 - 11,7

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

4.80

En

L20

L20

Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 MB 5,7 v

2. Edition

En

PES 6 A 90 D 410 RS 2696 RQV 300-1400 AB 1066 DL

supersedes 10.79

company Daimler-Benz

engine Om 352 A

(124 kW(169 PS))

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,00-2,10
(1,95-2,15) mm (from BDC) Cyl. 6

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	11,4-11,5	7,3 - 7,5	0,3(0,45)			
300	8,2-8,4	0,9 - 1,5	0,2(0,4)			
500/500	-	C, 4 - 5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1400 1750	15,2-17,8 0 - 1	-	-	-	ca. 15	100 300 730-790= 2,0	min. 9,8 8,2-8,4 2,0	300 485 1470	1,2-1,3 2,4-2,6 8,3
ca. 62°	10,4 4,0	1460-1470 1585-1615				400-460 ③a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed limitation intermediate speed (2b) (4b)	Fuel delivery characteristics high idle speed (5b) (5a)		Starting fuel delivery idle switching point (6)		Torque-control travel (5)	
rev/min	cm³/1000 strokes	rev/min	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
LDA 1400	0,35 bar 72,5-74,5 (70,5-76,5)	1460-1470*	LDA 500	0,35 bar 67,5-69,5 (65,5-71,5)	100	72,25-82,25	1400 1220	11,4-11,5 11,5-11,8
			LDA 500	0 bar 52,0-54,5 (50,5-56,5)	100-	220(80-240)	1000 500	12,1-12,3 11,5-11,8

Checking values in brackets

* 1 mm less control rod travel than col. 2

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D. Adjustment Test for Manifold Pressure Compensator

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure increasing

5,7 v

-2-

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel - diminution difference mm (1)
2596 with 1066	0,35	0,25 0,10 0	12,5 - 12,6 12,1 - 12,2 11,3 - 11,5 11,1 - 11,2

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

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